The Builder.

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Paris and London: Points of Contrast.

OUR recent article on the French capital* will have sufficiently apprised readers of the *Builder*, that our endeavours in presenting information and impressions concerning what may be seen on the Continent, have a particular aim bearing on what are facts admitted of the position in England, of art-architectural, and of the general condition and aspect of our towns, especially London. Of things wherein the interest is allied to the past, rather than to the future, and possibly of much more that is proper matter for an architect's attention, we can promise no account. We will not discuss at any great length whether the comparisons sometimes made by home-returning architects, are just or not; and whether one whose life is spent within the compass of an English town, or under the canopy of an English sky, has not some advantages and sources of gratification, be they in their nature pertaining to a sanitary and good social condition, or responding to the love of beautiful objects, or to the claim for political liberty. But, if we have never participated in estimates which have taken no account of what there is in England, or has been done lately in art as well as social science, we must be blind to all that is now before our eyes, if we do not admit that productiveness of our special art is, in London, after five-and-forty years of political ease, vastly below the manifestation in the capital of the French empire. To the fact that we have a *nucleus* for the production of even better architecture than is now in vogue in Paris, namely, by recognition of principles, such as the pages of this journal have helped to disseminate, and by the progressing solution of others, we alluded in our last article; and this fact is admitted by certain thinking men of France, generous and sensible enough to appreciate what is English; though their opinions are now only about to find expression.

Still, whatever advantages in England there are in any point of view, or whatever has been done lately for reduction of a high rate of mortality, be it understood that the French are employed at present on works in their capital, and, it seems, with a conviction of the importance of sanitary improvement, *as well as* architectural effect, on a scale and with an activity which appear likely to leave London, in the next four or five years, and in all these respects, in the rear. The condition of a vast number of the residences of artisans and the poor in Paris is, indeed, at present, very bad; and the same may be said of a large number of habitations of the superior classes. Defective sewerage; a water-supply, bountiful for the streets and fountains, but inadequate or wanting altogether for the habitations; the consequence of these conditions, namely, much that is disgusting to two of the senses, and that becomes at last morally pernicious; and the ventilation, seldom adequate from internal courts, and very bad indeed in those apartments where, as of late years, several have been formed by the division of one: all these exist, and entail much uncomplaining misery, as well as contribute to the events which, from time to time, startle the attention of Europe. But these circumstances and their influences have become better understood; and not merely are there in progress great works, of which we have often given account, destined to open out new quarters, afford facilities of communication, and thus give to all classes better chance for procuring suitable habitations, whilst those works will combine the finest elements of architectural effect; but the *assainissement*, or rendering wholesome, of the present *logements*, and the prosecution of works of improved drainage, water-supply, and the like, are become the subject of so much attention by the State and the Department of the Seine, that soon a very different condition of health and comfort may be anticipated. As too much the case in London, the landlords view it as their interest to preserve dwellings in the unsatisfactory state in which they are, more especially as regards the supply of water to closets; so that the question of a law, as mooted in England, to prevent the letting of tenements not provided with proper conveniences, has, we are informed, been seriously entertained.

The contrast which, however, is exhibited between London and Paris, helps to show the interest which there would be in a line of observation to which we alluded in our last. To that extended inquiry, the facts and impressions which we gather in Paris will do no more than contribute; and it may be beyond our opportunities to enter so deeply into questions involving those of race, climate, politics, and a long succession of influences, as the importance of the subject to Englishmen and to architects would demand. But as this latter subject of the discrepancy between the English and French nations is now receiving attention from writers on public events, we are relieved from the necessity of showing how great is the difference of characteristics which can be observed. Still, we have to say that what each may derive from the other, as in the manner perceived by those writers, or what each has that the other has not, concerns the whole matter before us, and at last makes the difference of the productiveness in public works.

In France, a politeness of manner, together with an equality of classes, exists, of which many of the results upon the *ouvriers* and lower orders of the *bourgeoisie* claim the notice of those Englishmen who desire to promote kindly relations between the several orders in their own country, and may also deserve the attention of those workmen who visit Paris. It is remarkable how large an amount of enjoyment the Frenchman can secure, with an indulgence in little more than "temperance drinks." In the restaurants, so clean and civil are the waiters, that you at length almost overlook the absence of salt-spoons, and the circumstance that the roll of bread is brought to you in the hand, and very soon tolerate vicinage of one of the fraternity in the *service*, who seats himself near you for convenience of conversation, or to eat his own meal. Certain forms and expressions of politeness which the Englishman either neglects to his "inferiors," or can observe only at his disadvantage, are common to and amongst all persons in France; whilst their omission is especially noticed in an Englishman. If the Englishman in Paris will only bring a "Monsieur" into the form in which he puts his question, or show the deference by his manner, and will even rather take off his hat than merely touch it as the French do on entering a café or any place where ladies are present, it is surprising what apparently warm-hearted kindness he will receive; and he will perhaps wonder that such a people as he is amongst, could ever be anything else than his friends. Of course, this view of the French character leaves certain important points out of the question; but there are no features in the character which so much deserve attention as those which, shall we say, the English workman will meet with in his foreign *confrère*. If the latter expects the deference, he apparently has it in France willingly, as most properly, accorded to him. Even in the personal cleanliness, which is sometimes supposed to distinguish the one nation from the other, it may be doubted whether the advantage is always on the side of the Englishman of the artisan class. However these things may be, the growth of relations between the steady and intelligent men, English and French, of the industrious classes, entitled to respect, and who would be ready to give it, would be as probably serviceable to themselves as it would be productive of the relations which are desired between the two countries.

Leaving this to be regarded as digression, or for whatever importance the reader may please to attach to a feature which we have named because of its prominence, we proceed to other features of character or condition, which he may or may not deem matters for congratulation of the French people. These are the excessive thirst for luxury and costliness, whence come the prominent taste for ornament in the architecture; the pride in commemoration of military achievements, productive of many monuments; the taste for organization, which at least provides the machinery for action; the despotic government which ever and anon puts the machinery in motion, and effects results before there is the time for intention to cool; the accumulated results, in works and in systems of study, of a long attention paid to architecture, and to the education of all artists; the direct recognition of the professional architect amongst public benefactors, whether in the award of decorations, which the Frenchman loves, or of public appointments, or by the perpetuation of his name with that of a street, or the allotment of a place for his bust or statue, or only by the record of his name, on the building; and many other elements of the French country and nation that are at once noticed. What is, however, perhaps the greatest of the real advantages of the French capital, has yet to be named. This is the peculiarity of the atmosphere, which is at the same time both the cause and preservation of, and the best of the inducements for the public to appreciate and demand, as for the architect to provide, what is beautiful. This favourable condition, which is scarcely ever known in England except in the country, or which at least is unknown in towns during a considerable portion of the year, is generally characteristic of the climate of Paris. During this severe winter, whilst the cold in Paris has been intense; whilst snow has covered the ground, and the Seine has inundated the country and parts of the capital itself, there have been frequent days of cloudless sky and brilliant light, in which the domes and steeples have been defined, and the columns of porticoes have cast their shadows, with results which the architect scarcely looks for on this side the Alps. We have never seen, in a summer's sunset, any more beautiful effect of colour and light than was to be seen a fortnight since, one evening, in the Bois de Boulogne. Also in the atmosphere of Paris, there is very little smoke; and the stone, which is one of the advantages for the French capital, and which being very easily worked, allows of much enrichment inexpensively, retains its condition favourable to the effect, whilst it appears also to endure in a manner which would not be supposed from its original softness. It would be assumed that the superiority in this respect over London of Paris, comes from the general use in the latter, of wood, or smokeless coal, as fuel; but we think there is some other reason. We are not aware what description of fuel is used at Rouen; but there the atmospheric clearness seems to us as great as at Paris, although there are so many manufactories that Rouen is called the Manchester of France. Allowing for difference of scale, the town ranks very little after the capital in the attention paid to art in private buildings, if, indeed, it be not quite equal to it in the quality of the works. Architects may find

* See page 17, *ante*.

buildings of the warehouse class, in the new portion of the town, which are as worthy of attention as the old houses. In the district referred to, however, the western, there are many features of the architecture which are pleasing reminiscences of older works, such as the prevalent arrangement of the top story, of wood, with wide openings and a boldly-projecting cornice and cantilevers. The effect is enhanced by colour of the yarns which are hanging from poles projecting from this belvedere or gallery story. The long window of the top story of houses in Spitalfields, is a feature which came from France. At the extremity of this part of Rouen may be seen a chimney-shaft which is very suggestive of effect that might be combined with that description of structure. The height is divided by horizontal bands of stone, and the top is formed by four bold cantilevers, and by corbelling out of the courses in the interspaces, to carry the stone coping. There is, however, a better exemplification of this sort of architecture at Dieppe, in two chimneys which are in corresponding positions and of symmetrical designs, and form part of the tobacco manufactory, which is, altogether, a good work of the class, in brick. In these latter chimneys, one of the divisions of the shaft is fluted, and another has coloured bricks set spirally. The physiognomy of the buildings at Dieppe is very pleasing, though quite different to anything in Rouen or Paris. A large dormer window is a feature almost universal.

The modern buildings of Rouen have more of the Renaissance character than those of Paris to which our attention is specially being directed; the latter, that is, the most recent works, it is very difficult to describe by any appellation of style; their features are derived from the study of Italian architecture; from that of Greek; from natural flowers as regards much of the ornament; from the buildings of the Louis XIV. and Louis XV. periods as regards stone consoles and trusses, woodwork of the entre-sol windows or tympana of porte-cochères, and ironwork of balconets; and lastly, in some details, from the Gothic. There is no doubt that the atmosphere and climate of Paris or France, lead the observer to pass over what may be the faults of the existing French school, and not the less so, if he be a real lover of the beauty of nature,—very much more so if he be constituted of the frame of mind rather to appreciate than depreciate,—as it would be even to the advantage of art-progress, if architects and observers of architecture were more generally. The sight is so much enchanted with what nature supplies to this effect, and the spirits are so raised by the animation of the scene which Paris presents even in winter, that one does not stay, for example, to remember the dome of St. Paul's in looking at the inferior work of the Pantheon; we see only what is before us; albeit much of the impression, if analyzed, might be found due to an effect which would have been conveyed to the eye of the artist even with a still inferior architectural form. The fondness of Parisians for the open air, is one of the influences doubtless to be taken into account in the prevalence of art out of doors, whether architecture only be considered, or sculpture in combination with it or with the laying out of ground, in all which fields the French capital is rich. The sculpture in the gardens of the Tuileries and the Luxembourg, produces an effect of which those who are accustomed only to the arrangement of English gardens have no idea: whilst the individual works, or many of them at the Tuileries, at the western end of the gardens, are most happy in their design and treatment. As some of these works are much injured by the weather, which even in Paris will tell upon marble after many years, we hope that copies are preserved. Attempts at the English style of gardening, in the suburbs of Paris, often fail from the want of the habitual attention which produces the most noticeable part of the effect in England. The French or Italian style, however, in which sculpture and architectural forms are associated with the grassplats, and the flowers and shrubs,—the art and the nature enhancing each the other, and together making the best foreground to the building,—little appreciated with us, is thoroughly well managed: it makes the one glory of Versailles; and we much regret that one of the most enchanting features at the Luxembourg, the grotto and grove with sculpture, is to be sacrificed for the new street which is to connect the district of the Pantheon with the Odeon. We are inclined to think that this new line is not the only good one, even in the object which has decided its adoption. The French have very recently, in the Champs Elysées, effected a great improvement by the introduction of patches of grass and beds of flowers. Previous to this, the effect of a large surface of dark ground, only relieved by the trunks of the trees, was not good.

Another advantage which the French have for architectural effect, is one of which we have often spoken, and results from the combination of many tenements into one building. Thus, a large proportion of the buildings, or, we might say all, in the principal quarters, can have at least the effect which may result from size and symmetry, and from the prominent central feature of the entrance, which certainly the French architects manage with great skill. One of the first things that strikes a stranger entering Paris, after the height of the buildings, is the general equality of the heights, in place of the contrast, as in London, where a house may be double the height of one adjoining, and where effect of street architecture has consequently very partial existence. This character seems to result in part from the circumstance that every house is subject to certain restrictions,—as one of height, which varies with the width of street,—and from the inducement in ever accumulating returns from tenements let, to provide the very most, on the area of ground, that the regulations or law will permit. By the decree of 27th July, 1859, the height of each front wall and parapet is not, for streets of 9·75 mètres and above, to exceed 17·55 mètres; though on the streets and boulevards of 20 mètres and above, the height of the buildings may extend to 20 mètres, but under the obligation not to provide more than five stories of the ordinary kind above the ground story, the entre-sol included. A mètre being 3 281 feet English, 20 mètres are equal to 65·618 feet. This restriction, however, admits of the construction of an attic story, set back from the front, which, therefore, is a common feature in the French houses. It is built generally of quartering plastered, or, at best, of hollow brick. The terrace walk in front of the windows of this story is both an agreeable adjunct to the apartments, and a means of communication from one to the other, not to be regarded as altogether an advantage. Some of the older houses are, as we have hinted, of a much greater number of stories than the six or seven: one by the Palais Royal has nine or ten stories with those in the roof; and some of the best of late works are in narrow streets, where they cannot be properly appreciated. Indeed, from whatever circumstances, many houses seem to be of greater height than the law would now permit. By the decree we have just spoken of, façades can be built only to the height determined by the houses constructed on the same line or *alignement*; though here there is some obscurity, according to our reading. Buildings situated out of the public ways, as next courts, are not to exceed 17 55 mètres. The height of the rooms in each story, is directed to be not less than 2·60 mètres; and it appears that for the story in the roof, this height may become practically less. Strict regulations are also applied to the height of roofs, and the arrangement of lucarnes or dormer windows. The public edifices are exempted. By a previous decree (26th March, 1852), great powers are given to the Prefect of the Seine, for dealing with property, and for prosecution of the works of improvement. Amongst the articles is one requiring that every new building in a street provided with a sewer, shall be disposed in such manner that both the rain-water and the liquid drainage from the house (*eaux ménagères*), shall pass into the sewer. For the removal of refuse of every description by sewerage, we apprehend that the authorities do not consider they are prepared. Existing houses are subject to the obligation we have mentioned in case of works of reparation, which are considerable; and in any case they become so before the expiration of ten years. By another regulation, façades are to be constantly kept in a proper condition of appearance; and the municipal authority has power to fine, in the amount of a hundred francs, those who fail to scrape, and colour, or paint, once in ten years. We shall have more to say of the architectural features of the new buildings, as also of the works in progress or contemplated for the amelioration of the public health. We were just now endeavouring to discover causes of the difference between London and Paris, in art-productiveness, and in the immediate prospects for some branches of that sanitary science in which our country claims to have taken the lead.

Whether we look to the Imperial Government, or to the Department which has its head quarters at the Hôtel de Ville; to the machinery for art-education and the cultivation of science, or even to that of the colleges and primary schools, we are struck with the fact of an organization which seems to leave no object of art or of social improvement without its proper trustees. In each service or bureau which may have at any time to deal with architecture or construction, or with the provision for the public fêtes, an architect or engineer is usually to be found named, and often as needed, at the head of such service. Thus every monument of Paris, be it only the obelisk of Luxor, or the statue of Henry IV., has its architect formally attached. As regards London, the inquiry will not be forgotten in which it was attempted to discover under whose charge were the statues in the squares and public streets. The responsible man in Paris having his attention generally directed to the subject, notes when anything is required, and the work is promptly carried into effect. Thus M. Hittorff is having the fountains of the Place de la Concorde removed, that they may undergo the process of galvanization which will assist their preservation. That the right men are often found, is clear to us; and it is at least a good step towards the achievement of such works as are now going on in Paris, to have a system whereby the *place* would be looked to wherein such a man should be found.

Estimating, as we proudly may, the value of English educational institutions, and crediting any assertion that progress is not exactly accordant with what might be expected from what is observable of system in the one case or is deficient in the other, we yet think that the institutions and the organization, from first to last, through which the objects for which we strive in London are pursued with more speedy success in Paris, deserve to be brought more directly than they have been to the knowledge of our countrymen; and we may hereafter give particulars which we have obtained, and which may be held to justify us in the belief that a better knowledge of France would be beneficial to Englishmen, architects, or others. The actual machinery in London is unfortunately not so productive as that in Paris. Passing by the fact that the metropolis of Great Britain has not even yet, one comprehensive authority like that of the Prefect of the Seine; there are several distinct spheres of duty, having in Paris each a commission or a bureau, which in London are amalgamated under one officer; who admirably as he may perform his duties under ordinary circumstances, would be physically unequal to what is just now demanded of several bureaux, each with its chief and secretary, at the Hôtel de Ville. That the French love of organization is greater than necessary for the actual

results, and that British force makes good way without it, has, as we have said, been sometimes contended; but we think a comparison between the present prospects of the two capitals will show that the difference which is unquestionable, must be in part due to that which we have just alluded to. It should be distinctly understood, however, that there is a very great difference between the two capitals in regard to the funds applicable to improvements. The authorities of the Hôtel de Ville have very large sources of revenue such as are denied for the present to the Metropolitan Board of Works; or like the *octroi* duties, could never be afforded; and they have, moreover, the direct assistance of the state to the extent of one-third the cost of the improvements.

It therefore results that the Prefect of the Seine has been able to arrange for the expenditure, in the thirteen years ending with 1871, of 180 millions of francs,—that is to say, the state contributing 60 millions of that sum. The amount—say 7¼ millions of pounds sterling—seems considerable for Paris; but double that would be a trifle in the view of similar results for the British metropolis. We have not hesitated to express a general approval of these measures, even taking into account the dissatisfaction which they have caused, and the present dearness of Paris as a residence. We feel the same approval of the principle of these improvements as that enunciated in the "Mémoire" which was presented on the 19th of March, 1858. Having admitted primarily that it was an object to shelter the capital of France from the enterprises of the authors of revolutions; having regarded the fact that fever, misery, and *émeutes* have contemporaneous manifestation; having alluded to the agglomeration of London as evidence that the similar movement in Paris would not cease, and could not be opposed; and having described in the report the works projected, and set forth the means proposed for the execution, the report concludes,—

"The actual plan, very different from the old projects, has been dictated not only by an attentive study of the factious agitations of Paris, and by a perfect knowledge of the daily movement of the population, and of the relations of quarters with one another, but also by a lively sentiment of art. The positive service rendered is hidden by the splendour of the design, and of the vistas; or rather the embellishment of the city, and the grandeur of the effects produced, result even from utility as thoroughly comprehended. Superficial minds are easily deceived in this matter; and, because the great works already accomplished in Paris, open picturesque views to promenaders, and give a grandiose appearance to certain parts of the old city,—up to this time very ungraceful,—they fancy that magnificence and agreeableness form the object of the principal works. It is an error; but it is also on their part an involuntary encomium of the idea which causes those works to be executed. That which is a good thing in the high acceptation of the phrase, is naturally fine; and the proper character of true art consists in giving the excellence of form in what is veritably good."

With this quotation, which does not conclude our present subject, we will for the present break off.

STONE-PRESERVING PROCESSES.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A SPECIAL meeting of members was held on Monday evening last, at the House, in Conduit-street, for the purpose of resuming the discussion on the merits of the various stone-preserving processes applied to the new Houses of Parliament and elsewhere. Mr. M. D. Wyatt, V.P., occupied the chair.

The Chairman said that, since the last meeting, a letter had been received from Mr. Daines, the patentee of one of the processes, in reply to some observations made by Mr. Godwin, in reference to the decay of the statue of Capt. Coram, at the Foundling Hospital, after it had been subjected to Daines's process. (The letter in question was read, and the writer attributed the decay mentioned to accidents, caused most probably by stones being thrown at the figure. He denied that the preserving process had proved a failure, and reiterated the assertion that the sculptor (Mr. Calder Marshall) had expressed himself in high terms of approval of the invention.)

The Chairman observed that he was sure the meeting would be glad to hear any observations Mr. Godwin might wish to make on the subject of the letter, but that it would be more convenient to proceed, in the first instance, to the more important business of the evening. At the last meeting it had been arranged that Mr. Edward Barry should resume the debate, but that gentleman had kindly waved his right of precedence to Mr. Ferrey, who was forced to leave early.

Mr. Ferrey said that he would first refer to the letter of Mr. Cole, in which that gentleman requested that he might state his experience of a process introduced many years ago. He held in his hand a letter referring to this process which had been brought under notice eighteen years ago by Mr. Sylvester. It consisted of two solutions, one of alum and the other of soap. It was not pretended that it entered into the stone to alter its character, but its effect was to keep off wet and moisture. The ingredients were mixed in the proportion of three-quarters of a pound of mottled soap to one gallon of water. It was laid over the stone with a brush, and remained for twenty-four hours to become hard. Another mixture, consisting of half a pound of alum to four gallons of water, was then applied over the coating of soap. He had himself applied this process to several buildings, but he did not mean to hold forth that it was a permanent remedy. He first applied it to a large building of brick, with stone dressings, in Dorsetshire, where it appeared that nothing but a coating of cement or paint could protect the walls from damp, and he found that the process effectually resisted the weather for five years. He had also applied it to another building with like results. After a time the weather, no doubt, began to operate upon it; but the process was so cheap, and so easily applied, that it might be renewed whenever required. The whole cost of covering a large house with it would not exceed 3*l*. The substance was transparent, and did not in the least discolour a building: on the contrary, it imparted that mellow appearance which they all wished to see. He could also add another remarkable instance of the way in which it might be applied. The late Mr. Whichcord had told him that he had made a bold experiment with it, in coating a stone cistern, which was now in use, and which, although exposed, throughout the winter, for three years, had never leaked, or exhibited any trace of decay. He did not pretend to say that the process would last for ever; but he wished to represent that it was a cheap process, and might be applied at intervals of some years, without prejudicially affecting or disfiguring the general appearance of a building. It did not stain or paint the building, but rather improved its general tone. Previously to coming that evening to give his experience of the soap and alum process, he had thought it right to visit the great building which was a special object of interest to them all as architects; and he was surprised to find to what a small extent the mischief had extended;—for, after reading the articles in the *Times*, and other journals, on the subject, he expected to find that great pinnacles were falling, that cornices were dropping, and that an amount of destruction was going on, which would necessitate the cutting away of a great part of the building. He had not been able to detect anything so serious. Decay, no doubt, was going on, but it did not extend over the whole surface of the building. If the five-hundredth part of the whole front was affected, it was the utmost. Rather than the present process of painting (for he could call it nothing else) should be carried on, he thought it would be far more judicious to cut out the decayed parts, and renew with fresh stone. In the course of his inspection, he had not found that the carvings had decayed. He went into the Speaker's Court, on the state of which so much had been said, and found that it had been painted. If the process invented by Mr. Szerelmey, or Mr. Ransome, were to be applied, he thought it would be sufficient to apply it locally, to decayed portions, without covering the whole of the building. In conclusion, he had only to add, that he was strongly impressed with the undesirability of covering a whole building with any process, such as that which had been described.

Mr. E. M. Barry said that in the position which he occupied he was anxious to address some remarks to the meeting, if only in explanation of some of the statements which had been made in that room. The discussion to which they had been invited had branched into two heads; first, the original selection of the stone used in the new Houses of Parliament; and, secondly, the preserving processes now under consideration. He wished to say a word or two on both these subjects; but before doing so he wished to thank Mr. Ferrey for anticipating him in the observations which he meant to offer as to the gross exaggeration in the public mind as to the extent of the decay which had set in. That there was decay was unfortunately too true; but the decay was partial; and it was not true to say that it was general or extensive, save in a very minute fraction of that large building. With regard to the stone, it had been selected by a commission, supposed at the time to possess the confidence of the Government and of the scientific world. They were told the other evening that the quarry had been changed, in consequence of the representations of one of the Commissioners, who had sent up a block 18 inches by 9 inches. Now, he had reason to believe that this was not the impression intended to be conveyed, and that, in fact, it was entirely incorrect. The stone, it was true, was sent up, as had been stated; but the Commissioners subsequently visited the quarry, and a stone different to that originally selected was ultimately chosen. The choice of stone was, as they all knew, a most difficult matter to deal with; and no one who had heard the statement of Professor Ansted could successfully maintain that we were in a position to dogmatise as to the choice of stone. The late Sir Charles Barry (the speaker's father) had been appointed a member of the commission, and he presumed had exercised some influence over it; but if his opinion had differed from those of such distinguished geologists as Dr. Smith and Sir Henry de la Beche, or from the practical experience of his colleague in the commission, Mr. C. H. Smith, he (Mr. Barry) was persuaded that he would not have pressed his opinion, and he did not think any other architect would have prevailed against such authority. They were told at the last evening of meeting to look at the Museum of Practical Geology in Jermyn-street, and then to look at the new Houses of Parliament. But, in fact, the analogy failed; for, if they were to examine the Museum of Geology, they would find that the statement that "there was not a faulty stone in it" was not true; but, on the contrary, there was a good deal of decay, though not so much as at the new Palace at Westminster. Besides, it should be remembered that the position of the two buildings was widely different. The Museum of Geology was not built on the bank of a sewer, with potteries at the opposite side. He believed that, if they were carefully to examine the progress of decay at the Museum of Geology, and to compare it with the entire amount of stone in the building, the difference between the decay and that in the new Houses of Parliament would not be so great. But be this as it might, he believed the same care had been taken in the selection of the stone for both buildings. This was, in fact, proved by the letter of Mr. Grissell; and all who knew that gentleman would be of opinion that, if a mistake had occurred, he would have been the first person to regret it.* He would not refer further to this portion of the subject, but would pass on to what was, perhaps, now more important; namely, remedying the present state of things, and arresting the progress of further decay. It would not surprise those who knew the deep interest which Sir Charles Barry took in the subject, that the decay caused him very great anxiety. Five or six stone-preserving processes had been brought under his notice,—one from France, another from Germany, then Mr. Daines's, and, lastly, those of Mr. Ransome and Mr. Szerelmey. Some of these processes had been applied for a considerable time, but no distinct and satisfactory result had been obtained before Sir Charles Barry's death, and his (Mr. Barry's) appointment as architect to the building. The first instruction which he received after his appointment, was that Mr. Szerelmey's process had been adopted, and was to be applied by him on a somewhat extensive scale. Having no great faith in such processes, he naturally felt anxious, when called upon to apply them, and looked to data upon which he could form an opinion. He knew that his father had formed a decided opinion in favour of Mr. Szerelmey's processes,—that Mr. Szerelmey had gained his confidence by the experiments he had made;—so much so, indeed, that at one time when funds were wanted, he assisted him with money to pursue his investigations and to

* A letter from Mr. Barry on this part of the subject will be found on another page.

purchase materials. In making his (Mr. Barry's) inquiries he was at first met by a great stumbling-block, and that was the secrecy in which Mr. Szerelmey enveloped his process. It might be said, that Mr. Szerelmey had hardly done himself justice by the mode he had adopted. He had exhibited a lamentable ignorance of the character of Englishmen; and if he had been better acquainted with it, he would not have spoken of unfair treatment on account of his being a foreigner. The secrecy, however, which he adopted, was the surest way to engender suspicion and distrust; for in these days chemical secrets (so called) were no longer possible; neither were they compatible with the interests of true science. In consequence of this secrecy he (Mr. Barry) was thrown back upon other sources of information. The only reports which he could find on the subject were those of Professor Faraday and Sir Roderick Murchison, and they were so dispassionate and impartial, that he would draw attention to some of their most salient points. He found that on the 1st July, 1859, Professor Faraday wrote as follows, to the Right Honourable Henry Fitzroy, then Chief Commissioner of Public Works:—

"I had the opportunity yesterday of seeing Mr. Szerelmey, who communicated to me in confidence his process, with a slight reservation. I find nothing in his mode of procedure which is objectionable, or otherwise than good, or which would, upon *principle*, cause me to doubt the success of his process when properly applied. I may say the same also of other processes, founded by other persons upon the application of alkaline silicates.

Such being the case, we then turn to the results of observations, trial, and experience, without which no method can be judged of or finally approved. The trials at the Houses of Parliament have extended to periods of two or three years. That the stone of the building requires protection upon the external and weather faces is very manifest; nor can that surprise us when the condition of the London atmosphere, especially in relation to the sulphur acids derived from the coal, and the calcareous nature of the stone, are considered. In my opinion, the results of the trials (and I may say, large experiments) made by Mr. Szerelmey, are better than any of the rest; and, so far as one can form a judgment upon the experience of two years, justify the expectation that the process will sustain its character for a lengthened period of time."

Some subsequent correspondence took place, and his father recommended that Szerelmey's process should be carried out. Mr. Ransome at the same time requested that his system might be tested with Mr. Szerelmey's, and that they might be submitted to the judgment of scientific persons. The Board of Works in consequence arranged that Mr. Ransome and Mr. Szerelmey should each prepare a bay on the river front. When they were finished, Professor Faraday and Sir Roderick Murchison were requested to examine them. This was on the 6th of March, 1860.

The Chairman.—May I ask the dates on which the respective patentees applied their processes.

Mr. Barry.—They were applied within a few weeks of each other. On the 3rd of March, Mr. Phipps certified that the bays were ready; and on the 12th of March Professor Faraday reported that Mr. Ransome had prepared the south bay, which he would call No. 1; and Mr. Szerelmey the north bay, No. 2; and that the time which had elapsed since the application of the processes was about six months. He then went on to say:—

"No. 1 has more of the natural colour and appearance of the stone than No. 2: it is softer, wets immediately, and by degrees the water is absorbed. No. 2 is darker, an effect due to the varnish-like character of the last coat applied; is harder, and does not absorb water: the fluid runs from off it. The repellent coat appears to have much permanency, for alcohol and turpentine do not disturb it. Though the time of trial is short, there is a place where, I think, evidence of difference appears. At a part of the wall rain droppings have fallen, whilst that above has escaped; consequently the stone has suffered more; and this is very evident in many of the untouched bays. In the prepared bays (where the loose surface had been removed before preparation) I looked for a six months' difference at these parts. In the bay No. 2, I could find no sensible difference between the parts: both were equally hard and good in character."

The next letter to which he would refer was written by Mr. Ransome, and was in fact a protest against the report. Mr. Ransome said that the conditions under which the matter had been referred to Mr. Faraday and Sir R. Murchison were not such as to secure "a fair testing of the respective processes," and that a sufficient time had not elapsed since the making such application to enable these gentlemen, in the absence of a knowledge of the details thereof, to arrive at a sound and satisfactory conclusion thereon. Mr. Ransome, in conclusion, said:—

"I would respectfully submit that the only course that will be satisfactory to the public, and fair towards myself, will be that a chemical analysis of the details of our respective processes be made and reported upon by independent and competent men; and that the decision and report of your Honourable Board be suspended until a 'sufficient period' of time has elapsed for effecting the decomposition of any organic matter which either process may contain, and for revealing the merits or defects due thereto."

On the 19th of April, 1860, the Board of Works made another application to Professor Faraday, and forwarded to that gentlemen the letter from Mr. Ransome, and also a communication from Mr. Warrington, the chemist. On the 20th of April, 1860, Professor Faraday replied:—

"I think it will be sufficient if I state that I was quite aware of the general matters contained in the copies of letters from Mr. Ransome, which have been sent to me. I knew that both Messrs. Ransome and Szerelmey used soluble silicates, and the latter in addition a fine coat of bituminous or other such-like matter. I have also not forgotten the Speaker's Court, and other parts of the Houses of Parliament. My former letters have been very carefully expressed, and I think I have distinctly stated that I could not decide upon principle only, since either process, or both, might fail after the lapse of years through want of care or other circumstances; but, being thrown upon the short and insufficient evidence now existing, and taking into consideration, as far as I can, the two processes; my belief is now, as it was when I last wrote, that Mr. Szerelmey's process will prove to be the best."

This was not twelve months ago; and he presumed that, if the facts of the case remained unaltered, he would express himself in similar terms still. He (Mr. Barry) would now leave this part of the question; but he was bound to say that, after a careful inspection of the work, he saw no reason to contradict the opinion which he had just read; and that, as far as the evidence of the senses went, he was bound to say that Mr. Szerelmey's process was successful; but how long it might continue to be so, or what its ingredients were, it was impossible for him to say. They had heard a good deal of the Speaker's Court, and it had been said that portions of the coating or surface had come off in flakes. He did not think this was the case; but, when he was informed that Mr. Szerelmey was coating it over again, he stopped the operation. He did not, however, think that the first process had failed; but this was a point which might be determined by others, as portions of the wall might be examined where the process had been applied but once. It should be stated that several portions of the building had been operated upon at different periods. Mr. Ransome had treated a portion of the river front, close to the Speaker's entrance, and it had not succeeded; but all the portions to which the various processes had been applied were now labelled; and, if gentlemen interested in the matter would come down and judge for themselves, he would be happy to give them every facility for forming an opinion. He did not know whether the discussion was to terminate in a proposal for the appointment of a committee, or in the adoption of any other course; but perhaps the chairman would have the kindness to inform him what it was intended to do.

The Chairman.—The matter is in the hands of the meeting: I may say, however, that the council are of opinion that a committee of the Institute alone would not be a satisfactory tribunal, but that the matter is of sufficient importance to warrant the appointment of a commission of competent persons to investigate the subject, and bring to its solution as much professional and scientific talent as the country can produce.

Mr. Barry said he was very glad to hear from the chair an opinion in which he so fully concurred. Whether a joint committee of professional and scientific persons should be appointed or not was another question; but he believed that the subject was occupying the attention of the department of the Government responsible for the charge of the building. But whatever course might ultimately be adopted, he wished to state that he would co-operate readily and cheerfully in the work, for he felt the responsibility which attached to him in connection with the matter, and he was most anxious that whatever was the best course to adopt should be followed. He might add, that the recommendation was not altogether new; for, in December last, he had proposed to the Board of Works to refer the whole matter to a committee of gentlemen who should have their confidence. The appointment of some such committee, or commission, as had been suggested, would, in his opinion, be the only thing which could justify the Government in continuing stone-preserving processes; for, as far as he was concerned, he would not undertake the responsibility of adopting a secret process.

The Chairman then invited Professor Hoffman to address the meeting.

Mr. Godwin, V.P., said he must take the liberty of making a suggestion before another speaker addressed them, and that was, that if any gentleman of distinguished scientific attainments offered any remarks, he would have the kindness first to state whether he had been employed professionally by any of the parties interested in the inventions.

Professor Hoffman said he had not been employed professionally by any of the parties. His advice had been asked by the Chief Commissioner of Works, and he had been induced to pay more attention to the subject within the last six or eight weeks. In the first place, he must say that the task of the chemist in the present case was most difficult, owing to the element of time which was involved in the possibility of arriving at a due appreciation of the success of any given process. The first thing to achieve would be some process imitating the tooth of time, by means of which in a short time the value of an invention might be tested. The processes proposed for the preservation of stone were based upon different principles. Some were temporary preservatives, and others were permanent. The temporary consisted in the use of agents which sealed up the pores of the stone so as to defy the action of water. The permanent processes were intended to alter the constitution of the stone itself. Whatever might be the cause of the weakness or failure of stone (and many had been suggested), he had no doubt that the extraordinary facility with which stone absorbed water had a great deal to do with it. It absorbed water like a sponge, and also took in the sulphuric acid which abounded in the atmosphere of London. But the cause of the greatest mischief was the action of the water, imbibed by the stone, when it froze. Water in stone was liable to expansion and contraction when operated upon by the atmosphere. If this were admitted, and they could succeed in permanently sealing the pores of the stone, they could retard, if not do away with, the process of disintegration. If the access of atmosphere and water could be excluded, the question would be half solved. All the agents for sealing stone were perishable in their nature. Oil was a perishable substance. As long as it remained it would exclude the water, but it became decomposed by the action of the atmosphere. It had been suggested that the oil should be boiled with sulphur, but he did not think the idea was of any value. Stone might be preserved in a temporary manner by the application of linseed oil in the height of the summer, when it contained the smallest possible quantity of water. So much, then, with regard to temporary preservatives. The permanent involved processes of a different kind. The permanent kinds might be said to be that of Fuchs & Kuhlman, and that patented by Mr. Ransome. The theory of the process known as that of Fuchs & Kuhlman, but ultimately carried out by the latter, was based upon the theory of probability. It was not capable of demonstration by experiment. It consisted of the introduction of silicate of soda. It was contended that the carbonic acid of the atmosphere left the free silica deposited in the pores of the stone. The process of Mr. Ransome embraced silicate of soda and muriate of lime, and a transformation of silicate of soda into silicate of lime. It was further supposed that the silicate of lime gradually combined with the constituents of the stone, giving firmness to it. As far as his own experience went, there was no actual evidence in favour of either process; but there was this evidence in favour of Fuchs & Kuhlman's, that if a soft substance, such as chalk, were immersed in silicate of soda an efflorescence took place, and the substance became hardened. In the case of Mr. Ransome's process, the theory was seductive, but he would like to ask that gentleman to consolidate a brick of powdered chalk mixed up with the constituents of stone. In the present aspect of the question, he thought it was impossible to decide in favour of one process or the other. Speaking theoretically, he had no hesitation in saying that, in his opinion, the chances were greatly in favour of the original process of Fuchs & Kuhlman. His reason for arriving at this conclusion was this, that in their process the action took place gradually, and the silicate combined with the stone. One of its advantages consisted in the gradual nature of the process. If the decomposition took place rapidly, silicate of lime would be formed, and the chances were that it would not combine with the stone. He believed that the discussion which had taken place on the subject had been productive of great good, for it had caused the attention of the most inquiring minds in the chemical profession to be turned to it. Before resuming his seat he wished to throw out a single suggestion. The resources of chemistry were not exhausted in the various processes which had been submitted to the public. There was, for instance, a substance which, in his opinion, promised much good. Silica quartz, combined with spirit of wine, formed silicic ether, which possessed such remarkable properties that he was surprised it had not been tried as a stone preservative. Silicic ether was a liquor which boiled at 400 Farenheit, and contained 70 per cent. of pure quartz, and the remainder spirit of wine. It had the remarkable property of undergoing decomposition when left to the action of moist air. When left in an open vessel it gradually formed into a solid mass, which was as hard and imperishable as agate. The spirit of wine became separated when exposed to the atmosphere, and the hydrated quartz alone remained. This being the case, the question presented itself whether it would not be worth while to saturate a stone with the material, and ascertain whether the same result would not follow as in the open vessel when the ether was exposed to the air. He knew it might be said that the cost of the silicic ether would be too great to admit of its use on a large scale, but this difficulty might in course of time be got rid of. All the agents which preserved stone acted gradually, and he thought it was one of the advantages of Mr. Szerelmey's process, that it combined temporary with permanent qualities. The silicic ether to which he referred had also the property of an oil: it was indissoluble and would not mix with water. If a stone were soaked in it, it would be no longer permeable to water. (Professor Hoffman here produced two specimens of stone, one saturated with oil and the other with the silicic ether: the latter was hard and polished). He proceeded to state that hitherto the silicic ether had been treated as a chemical curiosity, and that he laid no claim to the credit of having discovered it. Though at present a very costly commodity, the materials used in its formation were cheap and common, and it was possible that if there was a large demand for it, it could be produced at a price to make it applicable to places where it was required. He did not, however, think that it could be applied to the whole of a building like the new Houses of Parliament, but he believed that it might be successfully applied to stop local decay. He was extremely glad to hear from Mr. Barry that the disintegration of the stone at the Palace was not so extensive as had been represented.

The chairman said he would be glad if Mr. Hoffman would be kind enough to answer two questions. Professor Ansted and other gentlemen had stated that when the action of decay had set in, in the interior of the stone, the application of any artificial process must be nugatory. He wished to know from Mr. Hoffman whether the process to which he referred would prove successful in such cases?

Professor Hoffman replied that he could not answer the question, except partially. He believed that a great deal of mischief was due to the absorption by the stone of water; and if they could get any process which would

prevent that, it would materially assist in the preservation of the stone; but he could not say that when a certain amount of mischief was done the silicic ether would remove the virus.

The Chairman.—Then what you say bears out the opinion of Professor Ansted. The process to which you refer being a repellant of water, I suppose the stone must be free from water when it is applied?

Professor Hoffman.—Precisely so. As a temporary protection it would act like an oil, and an oil must be applied when the stone is perfectly dry.

The chairman.—I should like to ask one more question. I presume the general objection to Fuchs & Kuhlman's process is, that, owing to its tardy action, the vicissitudes to which stone is subject generally get rid of the water-glass before it has time to set itself up in a permanent form?

Professor Hoffman replied that such was the case. If a building could be protected from atmospheric moisture the success of the process would be far less doubtful. In warm climates the experiments had been far more successful.

Mr. White asked whether the silicate so deposited was liable to contract or expand by frost?

Professor Hoffman said he had not had time to make many experiments on the subject. He had simply dealt with facts known to every chemist. He had mentioned the substance to Mr. Cowper, the Chief Commissioner of Works, and he had directed that some experiments on a large scale should be made with it. As far as the experience of chemists went, the silicic ether assumed the properties of agate, and attained such a degree of hardness as to scratch glass and be impermeable to water.

Professor Tennant observed that it had been said that Englishmen were seldom happy except when grumbling. The stone used in the construction of the Houses of Parliament had occasioned an opportunity for indulging in this national weakness, although he thought that more had been made of its shortcomings than the facts warranted. Two years since he had taken a Russian engineer over the building, and he assured him that it was only in England that a building of such magnitude and so uniform throughout in design and materials could be completed in the time and for the sum of one million five hundred thousand pounds. He added that, in Russia, it would have taken double the time, while the expense would have been 30 per cent. more: one monarch or one architect would have died, and then a change in the design would have been made. Looking at the matter calmly, the question was, would it be possible to find stone that would resist the effects of our changeable climate? He thought not. In his opinion the magnesian limestone was the best that could be selected for the highly decorated style of architecture. Some portions of the stone in the new Houses of Parliament were no doubt defective; and he was only surprised, from the observations made at the previous meeting by Mr. C. H. Smith, that it was not worse. With all its disadvantages, there was no reason to apprehend any immediate danger to the stability of the building. It would stand long after the present generation and their grandchildren had passed away. He had examined the building a few days before, and he found a number of men brushing down the loose particles of the stone: others were using a kind of paint which would look well for a short time. On visiting another court to which the process had been applied a few months before, he found a man brushing off a kind of efflorescence, which ought not to have been there if the process had been an effectual one. It might be asked whether we were likely to benefit should any new building, like the new Government Offices or a permanent Crystal Palace, arise, from the experience gained by the new Houses of Parliament, Buckingham Palace, the British Museum, and other public buildings. He feared not. He felt certain that many valuable and in some cases better materials were lying useless in the rocks, for the want of the engineer, architect, or proprietor making their qualities known. At the time the Druidical monuments were erected, the ancient Britons had neither roads, canals, nor railways in the British Isles. We, on the contrary, had about 9,000 miles of railway, and we had also the opportunity of examining the fine old castles, cathedrals, and other works, in this and other countries. He recommended that we should use the compact sandstones of the coal measures, the inexhaustible supply of limestone, and the syenite of Mount Sorrel, near Leicester, and that abounding in the Malvern Hills.

Dr. Franklin said he had little to add after the lucid remarks of Professor Hoffman, in whose statement he entirely concurred, because he believed that anything containing organic matter would not do as a preservative, for it would infallibly decay. It would be possible to prevent air and water coming in for some time, but it would not endure. This applied to the process of Mr. Daines, which did not differ much from the ordinary drying oils, except that sulphur would deface stone, owing to the presence of the metallic acids which combined with it. With regard to soluble glass, he quite agreed with Professor Hoffman as to the *modus operandi* of Messrs. Fuchs & Kuhlman's process. In Ransome's process (in connection with which he would state he had been professionally employed) a principle was involved which, theoretically speaking, was sound. It impregnated the stone with a soluble material, and this was followed up by a second operation, which precipitated it in an insoluble form. This caused internal crystallization, and he could not conceive how such a hardness could be produced without an aggregation in the particles of silicate of lime first deposited. Any attempt to use these processes in winter would only end in failure. They should be used in the summer, when the stone was as dry as possible, and the least amount of moisture in the atmosphere. With regard to the suggestion of silicic ether, he agreed with what Professor Hoffman had said on the subject. He had worked with it lately, but not with a view to hardening stone, although he was now sensible that it would have that effect. The properties of the ether were remarkably binding. If it were put into a bottle with a glass stopper, it would be impossible to get the stopper out again without breaking the bottle. The great drawback to the use of it was its enormous price. As an illustration, he might mention that some time ago he wanted several pounds weight of it, and could not get any one to make it. At last one gentleman offered,—not to make the ether,—but to make the chloride of silicon from which it was made, and that the charge would be 6*l.* per lb. The materials from which the ether was made were cheap enough, viz., flint, chlorine, charcoal, and methylated spirits of wine.

Mr. Daines read a certificate from the late Sir Charles Barry, bearing date the 24th of July, 1856, in favour of his process, and then proceeded to read a paper, in which he set forth the merits of the invention. Mr. Daines defended the introduction of the sulphur with boiling oil as a stone preservative, contending that it was an imperishable substance, and possessed valuable preservative properties.

Mr. Jennings observed that sufficient experiments had not been made with respect to gums. He had himself tried the soap and alum process, but he could not say that it had been permanent in its effects. In mentioning various processes for resisting the action of water, it should not be forgotten that diamond cement would last for twenty or thirty years.

Mr. G. G. Scott read a statement of the effects observable of various applications on parts of Westminster Abbey. This we give elsewhere.

Mr. Penrose remarked that after what had fallen from Professor Hoffman, they must all arrive at the conclusion that it would not be desirable to press forward any new processes until the suggestion thrown out by him had been tested. As, however, the expense of the silicic ether was very great, there might be room, in many cases, for the employment of cheaper processes, such as those invented by Mr. Ransome and Mr. Szerelmey. Personally, he had no knowledge of the former gentleman, and very little of the latter. Mr. Szerelmey had been introduced to him by Sir Charles Barry, when he was seeking a good kind of paint for the ironwork of St. Paul's Cathedral. Sir Charles Barry informed him that he had been unable to cover the galvanized iron roofs of the new Houses of Parliament until he had met with Mr. Szerelmey's process; and he (Mr. Penrose) recommended gentlemen present, when visiting the Palace, to look at the paint on the ironwork of the roof, and judge for themselves. He had no experience of Mr. Szerelmey's process as a preservative for stone, but he had used it on brick, where he had previously tried the water-glass, assisting it with ordinary varnish. Mr. Szerelmey undertook to keep the water out, and certainly he had done so effectually for a year, and the brickwork had not been altered in colour. How long the process might continue to resist the water he could not say, as sufficient time had not elapsed. He had also applied the process to the compo front of a house in Kent, where the compo was very little better than common mortar, and it had answered its purpose completely. He had likewise used it as a wash at St. Paul's Cathedral, to give colour. He had on the previous day tried the effect of smoking it with the flame of a common candle, and, at the same time, smoking an ordinary piece of oil painting. The result of the experiment was that he could not clear off the mark of the smoke from the portion painted with oil, while it was cleared off with great ease where Mr. Szerelmey's process had been applied. This he stated as a practical fact. He hoped the proposed commission would be appointed, and he thought that, as regarded Mr. Szerelmey, he had done sufficient to claim the attentive consideration of any tribunal that might be appointed on the subject.

Mr. Couch called attention to some specimens of a process which he said he had brought under the notice of the late Sir Robert Peel, and which would have been used at the New Palace of Westminster but for the sudden death of that statesman.

Mr. Godwin, V.P., said he thought the time had come for some practical result from the discussion which had been carried on so ably and fully for three evenings, and would therefore move the adoption of the following resolution:—

"That the Council be requested to memorialize Her Majesty's Government, urging that a joint committee of architects, engineers, geologists, chemists, or other competent persons, be appointed to inquire into the various proposed modes of preserving stone from decay, with special reference to the present condition, causes, and extent of decay, of the stones of the Houses of Parliament; and that in the meanwhile no further large application of washes to the exterior of the building be permitted."

He thought they had heard nothing in the course of the discussion to lead them at present to put implicit faith in any one of the processes brought under their notice. He confessed he would be sorry to see the remainder of the new Houses of Parliament defaced to the extent exhibited by some portions of the building, and therefore he laid particular stress upon the latter part of his motion. He was sure they had all listened with pleasure to the lucid, admirable, and well-considered address which they had heard from Mr. Edward Barry, and which, he had no hesitation in saying, would have the effect of freeing the character of the late Sir Charles Barry from any individual responsibility in respect of the selection of the stone. The statement was so clearly put that he was sure it must have persuaded every gentlemen present that it fulfilled the object of the speaker, and in every way accomplished the filial duty which he had undertaken to discharge. He (Mr. Godwin) fully agreed with those who thought that a good deal too much had been made of the decay of the stonework, and he fancied that a good deal of the hubbub might be traced to the fact that there were three or four gentlemen who were anxious to bring under review their own peculiar processes of preservation. With respect to Mr. Daines's process, he regretted that that gentleman forced him to repeat what he had said on a previous evening; viz., that the application of his process to the statue of Captain Coram at the Foundling Hospital had signally failed. He had taken the precaution of speaking to Mr. Calder Marshall on the subject, and his reply showed the worthlessness of certificates given prematurely. Mr. Marshall's reply was in very few words, to the effect that the process had in that case completely failed. He (Mr. Godwin) would have no hesitation in speaking as clearly with regard to Mr. Szerelmey's process, or Mr. Ransome's process, though he thought very well of the latter, if a similar instance came before him. He thought that the sooner they could obtain even negative results, such as that indicated in the fact to which he had referred, the better; as we should have fewer processes to consider.

The Chairman said that a letter had been placed in his hands, dated the 28th August, 1843, from Sir Henry de la Beche, which entirely confirmed the statement made by Mr. E. Barry, to the effect that his father had not gone to Anston, and was in no way individually responsible for the failure of the stone.

Mr. Tite, M.P., in bringing the discussion to a conclusion, congratulated the meeting on the practical character of the information elicited, which he was sure would not be without advantage to the profession. He fully concurred with what Mr. Godwin had said of the manner in which Mr. E. Barry had defended—if any defence were necessary—the conduct of his father; and, for his own part, it had convinced him that Sir C. Barry could not be held responsible for what had happened. There were on the table that evening before them specimens of all the varieties of stone which had been used in the new Houses of Parliament; and he defied any chemist to tell why one hardened and the other did not. He thought it a mistake to say that the failure of the stone was not extensive; for never in the course of his experience had he seen decay going on so rapidly, although he believed a portion of the stone was quite indestructible. When the discussion on the subject of stone-preserving processes first took place in the House of Commons, he took no part in it; but, when he found that a sum of 7,000*l.* was proposed to be voted for some process, at the recommendation of Sir C. Barry, he was forced to the conclusion that Sir Charles at least appeared sensible of the very extensive decay. He understood that the price paid for Szerelmey's process was 1*s.* per yard, and he could not understand such a price, except upon the hypothesis that ingredients of great value were employed in its preparation. On his return to town after the recess, he found that nearly the whole of the exterior courts had been coated with this rubbish, as he called it. He saw them painting the walls, and he believed it was done with nothing but common linseed oil. He had also seen a house coated with Szerelmey's preparation, and it was fading, and the house had since been painted. He repeated, that personally he had no feeling whatever in the matter; but he confessed that he did not like to see public money wasted, nor a fine building disfigured by the action of paint. He quite agreed in the propriety of the motion, which he begged cordially to second. A committee of the Institute had been suggested by Mr. Sydney Smirke; but he thought professional men could not give up the time which would be required for the purpose. His purpose had been answered by finding that a little borrowed daylight had been thrown on a very dark and difficult subject.

The Chairman, in putting the resolution, also referred to the practical character of the discussion, and stated that they were greatly indebted to the various scientific men who had addressed them, particularly Professor Hoffman and Professor Ansted, for the valuable information which they had afforded. He might also say, in reference to the gentlemen whose processes had been discussed, that if any persons had declared on their behalf that their inventions were impeccable they would probably have suffered in public estimation far more than from the most caustic of the critical but impartial observations which had been made upon them. They might depend upon it that time, in the same way that it acted on stone, would develop the good and destroy the bad.

The motion was carried unanimously, and the proceedings terminated, at a late hour, with a vote of thanks to Mr. Tite.

PROCESSES AS APPLIED TO RAPIDLY-DECAYED STONE IN WESTMINSTER ABBEY.

SILICIOUS, &c.

THE following is the statement read by Mr. Scott, as elsewhere mentioned:—

1. *The Water Glass.*—Tried in 1857 and 1858. The effects still remain, and the stone is a good deal hardened; the decay, in part, arrested, but by no means perfectly.

Mr. Paul's System,—Aluminate of Potash. Tried in 1857 and 1858. About the same in all respects as the water glass.

3. *Mr. Ransome's System,—Silicate of Lime.*—Tried in 1857 and 1858. Not very different from the above. The stone is hardened, and the decay in part arrested, but not perfectly.

3. *Mr. Szerlemey's Process.*—(This is placed under the head of Silicates, on the faith of the statement made to Dr. Faraday, though Mr. Szerelmey's pamphlet would lead to a contrary classification.) Tried in 1859. Stone much hardened; effects remain, though apparently diminished; decay only in a small degree visible.

Experiments have also been made on a somewhat extended scale, both with the soap and alum, and with Rochas' silicate. The effects of the soap and alum appear to have ceased; those of Rochas' system remain, but I am not able to judge well of its efficiency.

RESINOUS AND OILY PROCESSES, AS APPLIED TO RAPIDLY-DECAYING STONE IN WESTMINSTER ABBEY.

1. *Solution of Shell-lac in Spirits of Wine.*—This has answered admirably for internal work, and also work in the open air, defended against rain; but has not answered where exposed to rain; though, in some cases, where used upon plain ashlar faces, it is pretty perfect. It has been used internally for between four and five years; and a few external specimens for between three and four years.

2. *Solution of White Wax in Turpentine* has been tried for about three or four years, but has failed.

3. *The same, with the addition of Stearine,* has answered better, but is failing.

4. *Mr. Daines's Process, Oil and Sulphur,* has been tried since July, 1859. It has hitherto answered almost though not quite perfectly: the stone is very much hardened. One specimen shows a little failure under the projecting coping.

THE BRITISH INSTITUTION.

THE exhibition for the current year consists of 635 pictures, and fifteen pieces of sculpture, and as a whole is superior to those of the last two or three years. It displays some of those outrageous instances of bad hanging which are common here, and which people attribute to improper influences. We have no intention of reviewing the collection, but will mention a few of the pictures, not always the most prominent, that deserve attention. Every one will see Mr. Ansdell's large picture, No. 1, Mr. Lance's "Sunbeams" (37), Sir Edwin Lanseer's representation of a goat on an altar of burning faggots (the head of the animal very fine), which he calls "An Offering" (67), and Mr. John Gilbert's "Studio of Rembrandt" (169), the most important *genre* picture in the collection, and more carefully painted than some of his recent works. Mr. Solomon's (20), "Art-Critics in Brittany," however, will not be so easily discovered, as it needs a ladder to view it. (53), "A German Flower Girl," W. Gale, and (54), "A Quiet Spot," C. Smith, should not be passed over. There is breadth and beauty in 62, "The Villa d'Este, at Tivoli," F. Lee Bridell; and (73), "Harvest," H. Dawson, is one of the best landscapes in the room. (80), "Near Burnham Beeches," G. Sant, is a charming bit of nature. No. 111, a small version of "Felice Ballarin Reciting Tasso to the People," F. Goodall, is a work of great beauty, more covetable than the large picture. 144, "Early Sorrow," J. A. Houston, charmingly represents a child grieving over her dead bird. 150, "Common Pleas," Erskine Nicol, is full of humour. 196, "A Lazy Girl," H. O'Neil, is characteristic and forcible. In the same room we have marked 38, "Once a Week," and 39, "All the Year Round," both by J. Hayllar. 66, "A Quiet Shot," E. J. Niemann; 79, "Lucetta," T. F. Dicksee; 83, "Namur," G. C. Stanfield; 107, "The Fair Neapolitan," Alex. Johnston; and 176, "La Dent Blanche, from Evolena," Frank Dillon.

In the middle room, the first picture of consequence seen is 210, "The Wife of the Water-carrier trying on the Jewels," A. F. Patten, from a story in Washington Irving's graceful "Tales of the Alhambra." Mr. Patten has been more than usually successful. 256, "Girl of Brittany," E. J. Cobbett, is a picture of great excellence. T. M. Joy's picture, 298, "Travelling; Past and Present," suggests Frith and Solomon too obviously to satisfy. 324, G. Pettitt's "Evenings on the Lagunes of Venice;" 339, "London, from the Thames, in 1861," J. Danby; and Edward Lear's "Fortress of Masada, on the Dead Sea," are excellent landscapes. 231, "Lights and Shadows by the Wayside," J. A. Houston; 348, "From the Hill Side," W. Duffield; and 369, "Burial of Charles I.," C. Lucy, also deserve attention. W. Gale has a capital head in the third room, called "A Little Eastern," 429. 504, "Mariamne," E. Hopley, illustrates a passage in Josephus, touching Herod. The dress of Mariamne is a marvel of patient labour. We should be glad to see "Hamlet and the King," above it, for the sake of the young painter's name, A. B. Donaldson, but cannot. W. Lake has two clever little bits of desert life, 522 and 559, and P. H. Calderon a good picture called "The Return from Moscow," 543, wherein a soldier, dejected and wounded, finds on his return his betrothed in a convent. The lady bears her loss more lightly than he does.

Messrs. Cropsey, Underhill, A. Gilbert, Jutsum, Horlor, G. E. Hering, Girardot (227), J. B. Burgess, J. Fahey, C. P. Knight (484), Wingfield, L. J. Wood, C. Rossiter, and Alexander Munro, sculptor, have specimens of their art more or less important.

LIVERPOOL ARCHITECTURAL SOCIETY.

AT a meeting held on the 6th inst., Mr. James M. Hay, the president, in the chair, the president intimated that the successful competitor for the Milner competition was Mr. Isaacs.

After the transaction of some other business, Mr. W. H. Hay read a paper on the construction of Turkish baths, including a description of the baths which Mr. Hay had recently erected at the hydropathic establishment at Loch Head, Aberdeenshire. The recipient first enters the hall, a room 18 feet square, lighted from the dome, which is cut up into niches, varied in size, with eyes of coloured glass. Around this apartment are small rooms, screened off, with curtains for undressing. These rooms have seats and couches, furnished with the usual toilet apparatus. From this hall, the bather enters the frigidarium or cooling room, which is the natural temperature of the atmosphere. It is also 18 feet square, and lighted through coloured glass apertures, scattered along each side of the roof. This apartment is fitted up with reclining couches, to which the bather returns to luxuriate. From this he passes into the tepidarium or warm room, where the temperature is somewhere about 100 degrees; and at this stage the process of the bath begins: here are also seats, with shampooing tables. This place is lighted similarly to the last. After becoming acclimatised in this room, the bather is now shown into the calidarium or hot room, which is heated to a temperature of 150 degrees: here also are seats and shampooing tables. This room is 18 feet diameter, with niches, water-closets, &c., lighted with coloured glass, in foliated openings in the rim of the base of the small crowning dome; and in this apartment the sweating process begins. Adjoining this is another, of smaller dimensions, where the patient next enters for the purpose of using the hot and cold water, the Douche, the Spray, and other waters. Here is a niche provided, and completely surrounded with a coil of pipe perforated, and made to play upon the bather like a horizontal shower of rain. After the ablutions are completed in this place the bather returns gradually to the cooling room to enjoy repose. The floors are all laid with encaustic tiles upon a bed of mortar spread over the large fire tiles which cover the flues. The furnace is placed at one side of the hot room, below part of the floor, with which the flame comes in contact, and flows onward in flues which traverse the whole area of both these rooms, the heat of course becoming less powerful towards the point requiring a lower temperature, where a chimney is provided to carry off the smoke. The furnace room is placed in the centre of the building. A boiler is placed over the furnace, connected by a circulating pipe with a cistern placed on a platform at the height of the first floor, where are also a series of cold-water cisterns. The fresh air is introduced at various points from the external atmosphere, and the vitiated air passes off in the hot room from an aperture at the top, regulated by an ornamental plate hung to shut and open at pleasure. The mode adopted in the warm room is with flues descending within the walls towards the furnace from the top of the side walls, as shown by these apertures, where the vitiated air enters and is drawn off or extracted by the furnace. The admission and withdrawal of the air are all regulated by dampers, which work with the greatest nicety, so that a circulation of pure fresh air is constantly kept up.*

METROPOLITAN BOARD OF WORKS.

THE PROPOSED INCREASE OF SALARY TO THE SUPERINTENDING ARCHITECT.

AT the usual meeting of the Metropolitan Board of Works, on the 9th instant, memorials were presented from the following districts and district boards against the proposed increase of the salary of Mr. Marrable, the superintending architect, from 800*l.* to 1,200*l.* per annum:—St. Martin's, Mile-end Old-town, Greenwich, Bermondsey, Kensington, and Plumstead.

A report was brought up from the Covent-garden Approach and Streets Committee, recommending that the salary of the superintending architect be 1,200*l.* instead of 800*l.* per annum, and that the resolutions of the Board of Jan. 25, 1856, and Feb. 4, 1856, in relation to the salary and appointment of the superintending architect, be so varied as to admit of such addition.

It was moved, as an amendment, "That the salary of the superintending architect be increased from 800*l.* to 1,000*l.*," and this was carried by 27 to 9.

EMBELLISHMENT OF ST. PAUL'S CATHEDRAL.

A PUBLIC MEETING has been held in the Egyptian Hall of the Mansion House, to further the endeavour to obtain funds for the proper completion of St. Paul's Cathedral. The Lord Mayor (William Cubitt), who presided, eloquently advocated the cause; and was followed by the Bishop of London, Mr. Tite, M.P., the Bishop of Oxford, Alderman Dakin, and others.

We hope the appeal will be responded to. The arrangements for the evening services, warming, chairs, and other fittings, have cost about 4,500*l.* The removal of the organ and the completion of the choir have led to an expenditure of about 4,000*l.*: the great organ, recently put up in the south transept, will cost 2,000*l.*; and the cleaning and gilding already done, 2,000*l.* more. All the money in hand is spent, and the works wait the beneficence of donors.

The marble pulpit, which has been partly erected for the services beneath the dome, is dedicated to the memory of Captain Fitzgerald, who was slain in India. It stands on eight polished shafts of deep-coloured English and Irish marble.

We understand that the statue of Turner, to be placed in the cathedral, and for which the painter left 1,000*l.*, is making satisfactory progress in the hands of Mr. McDowell, the sculptor to whom its execution is entrusted. The statue is 8 feet in height. The artist is represented, palette in hand, leaning against a rock. He is in modern costume; wearing a cloak.

* The first published account of the revived Roman Bath, concerning which people are just now running mad, will be found in an earlier number of the *Builder*. In many cases the bath is doubtless very useful; but persons out of health should take good advice before they use it.

DESIGN FOR AN EXHIBITION BUILDING, EMBRACING A SUGGESTION FOR A METHOD OF CLASSIFYING THE INTERNATIONAL EXHIBITION OF 1862.

THE great desirability of keeping together the various productions of each locality or geographical district, without sacrificing the more important specific classification, has suggested the arrangement set forth in the accompanying diagram; having for its intention the combination of a geographical and general classification; that is, that in one and the same arrangement objects relating to the same subject shall be placed in juxta-position, whilst the various products of the same locality shall, as far as possible, also be contiguous.

The objects reviewed under the aspect of classifiability separate themselves into three divisions.

Firstly, by far the greater proportion, such as are capable of both geographical and general classification, consisting of similar productions from more than one locality.

Secondly, there would be a small proportion of objects too miscellaneous in character to be brought within a specific classification, but which would come within the geographical system.

The third division would consist of such productions as are not characteristic of particular localities, coming from too great a number of places to make geographical arrangement of any value, but which it would be desirable to classify specifically.

It is proposed that the building should be circular, or of some form related to the circle, as the ellipse, although this is not essential to the system advocated; and that, instead of dividing it into courts, as in the Exhibition of 1851, by which a great loss of space was entailed, the spaces actually occupied by the objects shall be narrow blocks of the form indicated by a shading on three quarters of the diagram; these blocks being defined by a double system of intersecting avenues representing the lines of classification; one system distinguished by letters A, B, C, D, E, &c., radiating, which it is proposed to call the geographical lines, in juxta-position with which objects from the same locality would be congregated. The specific system would be represented by the circumferential lines distinguished by figures, along which objects relating to kindred subjects would be arranged.

Supposing there are sixteen radiating or geographical avenues, they would provide thirty-two sides, or lines, of geographical classification; and supposing every place or country occupied the whole of a line, they would accommodate thirty-two geographical divisions; but, as each of these lines intersects thirty-four lines of specific classification, representing as many different branches of manufactures; it is evident that the whole length of each radial line will not be occupied by a single town or district, few places producing so great a variety of manufactures, but might be appropriated to six or seven distinct places that do not send identical manufactures. Thus, Birmingham, producing glass and hardware, might share the same geographical line with Coventry, sending silks, the Staffordshire Potteries, porcelain, and Manchester, cotton goods; each on the proper specific lines without interfering with any other. Again, it is improbable that the whole of one of the specific lines would be required for a single subject, and it might be divided into any number of parts to suit necessity; the only condition being that the whole of the towns or countries producing a particular manufacture shall be placed on the radial lines that are within the range of that part of the circle appropriated to it.

From the immense variety of proportions of the spaces, the whole system can be adapted to any exigencies, such as the disproportionate production of any particular manufacture in different localities.

For instance, if Birmingham, B B, sends more hardware and less glass than London, C C, hardware will extend beyond the centre of the block, C B, from the Birmingham line, B B, towards the London line, C C; and glass will extend over more than half of its block towards the Birmingham line, leaving Birmingham a smaller piece, or *vice versâ*. Again, if Birmingham and London send equal quantities of glass and hardware, the block appropriated to these manufactures between the Birmingham and London geographical lines would be equally divided; or, if they do not wholly occupy the block between their geographical lines, the piece of space to spare would be appropriated to some locality sending only the one branch of manufacture, as there would be no necessity for its being made to range with the other specific divisions by being placed on a geographical line. A reference to the quarter of the diagram, shaded in different tints, will explain how it is proposed to accommodate the several geographical allotments to each other.

In appropriating the space, the branches of manufacture from a small number of localities, but requiring much space, would be allocated on a part of one of the large outer circular lines; or, if from a great variety of localities, but not large in quantity, on one of the circular lines nearer the centre, where the geographical blocks are smaller. The circular corridors having been thus appropriated, the radial geographical lines may be allotted.

Firstly, to those towns or countries sending the greatest *variety* of productions; for it will be less easy to adapt these to each other, as to the relative proportions of qualitative space they will require, than towns and countries sending but two or three products, which may next be arranged.

It will now be found that a number of small, and partly isolated, patches of space will be left; and these, for the reason above explained, would be appropriated to localities sending but one class of products, which need not be placed on the geographical avenues.

With reference to the productions which would be of too various and miscellaneous a character to be capable of anything like a specific classification, but which would, nevertheless, enter into the geographical arrangement; it is proposed to appropriate three of the circular avenues, say 6—7, 16—17, 26—27, tinted darker for miscellaneous objects that can be arranged only according to locality. The reason for not placing these miscellaneous avenues in juxtaposition is that, where a radial avenue is appropriated to more than one town, the probability would be that some of the towns would occupy a part of the line distant from the circular miscellaneous avenue; and, as it is probable every place will send some miscellaneous productions, provision must be made for a portion of the space appropriated to them being adjacent to the range of every town on the lines.

The other class previously referred to, viz., of objects that are not characteristic of any particular localities, and produced in too great a number of places to admit of being geographically arranged, as works of fine art, machinery, agricultural produce and implements, and yet which would be classified specifically, must be kept quite separate from the intersecting avenue system, and might be advantageously confined to the outer rings with which it is proposed to surround the building; a portion of these would be appropriated as a fine-art gallery, the walls being available for the display of pictures, engravings, tapestry, &c.

The four principal transepts would be appropriated to large objects which could not be conveniently arranged in the avenues; and, as they would intersect at eight different points the lines of specific classification, the objects they contain would occupy their true places in the system. If necessary, also, the whole of the geographical avenues might be made sufficiently wide to receive large objects down their centre.

It would facilitate classification if geographical subdivision is not carried too far. British productions might be divided into counties and principal towns; but it might be found desirable to retain the produce of each foreign country under a single geographical head.

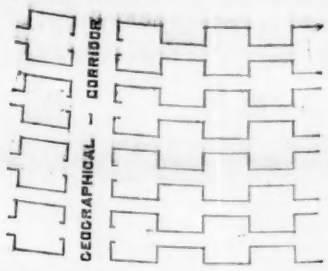
Specific classification and subdivision may be carried to almost any extent that is considered desirable; as, from the fact of most localities carrying on some one special branch of manufacture, the increase of specific classification will not involve a proportionate complication with geographical arrangement.

In instances where double classification cannot be conveniently effected, specific classification should be selected in preference to geographical.

The unequal production by various districts of different proportions of their several products would render it exceedingly difficult to proportion the space for a double classification by a simple intersecting rectangular division. Thus, Russia may send less total produce than France, though more of some particular product which would consequently have less space than the smaller quantity of similar product from France.

The give-and-take system, radiating from centres or lines of classification, as set forth on the annexed diagram, appears to be the only way of accommodating the necessarily various proportions of productions sent by the several geographical districts which it is desired to consolidate with specific classification under one arrangement.

If it is desired to divide the whole or any part of the space into courts, as in the Exhibition of 1851, the avenues can easily be converted into enclosed spaces thus,



without sacrificing the double system of classification. The double system of arrangement herein advocated, could be adapted to buildings of almost any construction, but the circular, elliptical, or polygonal form, would be preferable to any other, as affording a greater variety in the sizes of the spaces for the arrangement of objects, as well as a finer architectural effect, especially as regards the arcaded corridors, on various curves going right round the building, and the sixteen avenues, down each of which the whole range of the building would be seen.

As both the geographical and specific divisions are capable of being placed in an infinite variety of relative positions, they can be shifted and changed about to almost any extent, to bring them into reciprocal correspondence. Thus, if a specific division apportioned to a part of one of the circular avenues does not include the range of all the geographical districts sending the production, it would merely have to be shifted to one of the inner circles, where the same amount of exhibiting space will grasp a greater number of geographical districts. It could also be shifted round to any part of the circle, to make it range with the correct geographical divisions. The geographical allotments can also be shifted about, till they come within the proper specific ranges.

As a very small proportion of the exhibiting space, would be occupied by geographical districts sending a great variety of products: the difficulty of first dividing and allocating the whole space, both geographically and specifically to suit them, and afterwards arranging in the remaining space, localities exhibiting under but one, two, or three specific classes, would be but small, as these would present few obstacles to the arrangement under the double system.

The accompanying drawing has no pretensions to be correct as to the proportions of its parts. This could only be attained to after collecting the most exact data as to the probable area of space required for each geographical district and specific division, and deciding as to the extent to which each kind of classification is to be carried.

The transepts might perhaps be wider with advantage, and the avenues and the exhibiting-blocks may not be of the most available widths.

As some of the specific divisions might require wider exhibiting blocks than others, there would be no objection to vary the width of the concentric rings to suit necessity.

If the curvilinear outline of the building is objected to on the score of increased cost of construction (although, from the immense size of the ellipse or circle, its walls would be little more expensive than square work), the system could be easily adapted to a polygonal structure the form of which the concentric exhibiting-blocks would follow.

It remains now to describe the construction of the proposed building. As it has already been decided that the structure shall partake, at least in part, of a permanent character, we propose to construct the arcades *f*, which surround the building, and which we devote to the reception of agricultural and other similar implements, in ornamental brickwork, and roofed with a simple span roof of slate. The Fine Art Gallery, the outer annular space marked *s*, would also be of permanent construction, together with the blocks of buildings opposite the four transepts, and through which the main entrances are proposed. Leaving the Fine Arts Gallery, and looking into the building, the whole space would be occupied by concentric, circular, or polygonal rings of glass roofed avenues, supported by iron columns, and web or lattice girders. It would not be requisite that glass should form the sole material with which these avenues may be covered; sufficient lighting surface being insured, it might add to the comfort of the interior to cover the remainder with slate, the form of roof being a simple span over each avenue.

Approaching the centre of the building it is proposed that a gallery shall be raised as seen in the elevation. This may be done either in brickwork altogether, or in brick for the ground range and iron and glass above, or in the last-named material solely; and this gallery might with considerable advantage to the design be carried to a greater height than the lower floor, which would afford a very favourable position for the display of many such manufactures as carpets, floor-cloths, and draperies requiring much hanging space. The centre of the building would probably be best occupied as a garden, and thus not only would a very delightful effect be gained, but ventilation would also be much assisted; and by providing a large basin for water, as seen on the plan, fountains, nautical and diving apparatus, and other similar exhibitions would be provided for. The design also contemplates the covering of this centre space with a dome, but as this would add very greatly to the outlay, as well as to the time required for construction, it would probably be desirable to employ the space in the first instance as an open garden, adding the dome at any subsequent period.

The material chosen for the permanent portion of the design, viz., ornamental brickwork, appears to the authors to offer the greatest facilities for executing what must under any circumstances become a work of considerable magnitude. It will admit of extreme enrichment at trifling cost, and may be relied upon for durability in atmospheres where stone cannot be trusted, and furthermore can be expeditiously produced. The iron portion of the construction has been designed upon the principle of the 1851 building, viz., the greatest possible repetition, and multiplication of the same parts, involving very few patterns, and admitting of being rapidly combined. Were it desirable to remove all the less permanent portion of the erection after the Exhibition, the remainder, viz., the annular avenue, devoted to fine arts, would form a noble gallery for that or any other similar purpose, offering space for the display of an almost incalculable number of works, without the necessity of placing them either above or below the most favourable height for inspection. In that case the whole interior being removed, the space might possibly be employed in gardens by the Horticultural Society.

The authors have endeavoured to grasp in this project, every suggestion that has appeared with reference to the many requirements such a building ought to comply with. The arcades surrounding it offer numberless modes of ingress and egress, points for carriages to set down and take up visitors, without crowding or loss of time; in fact, visitors may alight at any part of these arcades, ample space would be provided for the executive staff, for first and second-class refreshment-rooms, news-room, telegraph office and exchange, machinery at rest and in motion, outside, and yet in immediate proximity to the rest; retiring-rooms for both sexes at convenient distances, easily found, though not needlessly and unpleasantly obtrusive, and last, though not least in importance, large spaces would be available for the storing of lumber, packing-cases, &c.

GEORGE MAW, F.L.S., F.S.A.,
Benthall Hall, Broseley,
Author of System of Classification.

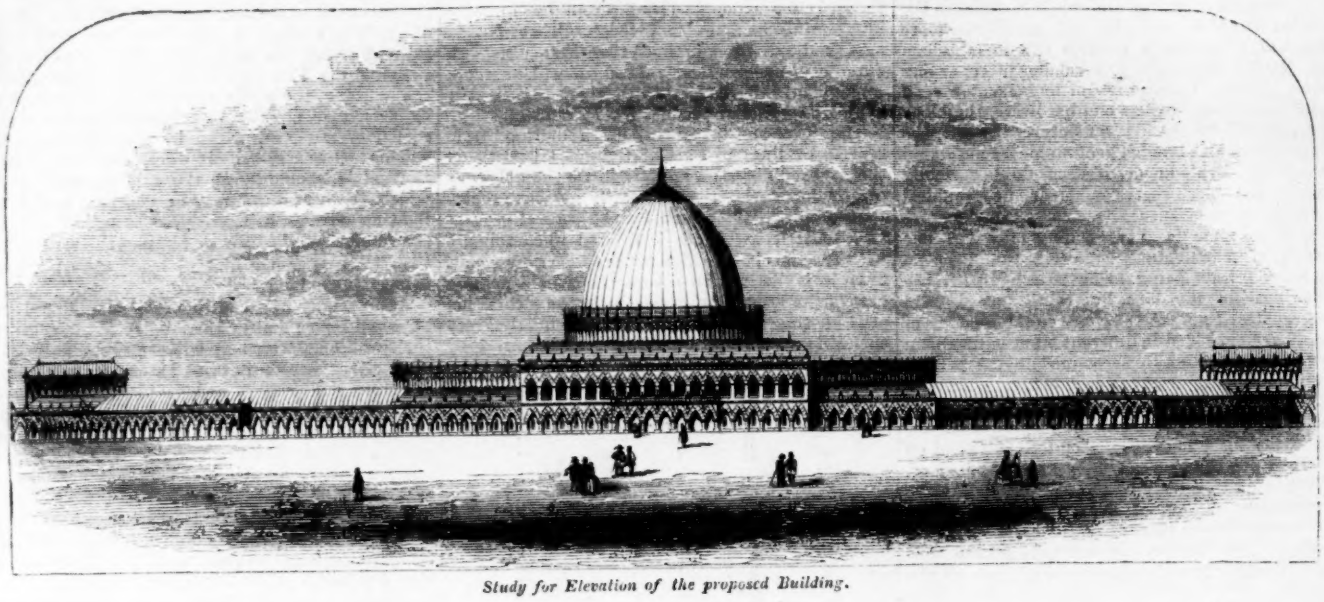
EDWARD J. PAYNE, F.R.I.B.A.,
Bennett's-hill, Birmingham,
Designer of Building.

REFERENCES.

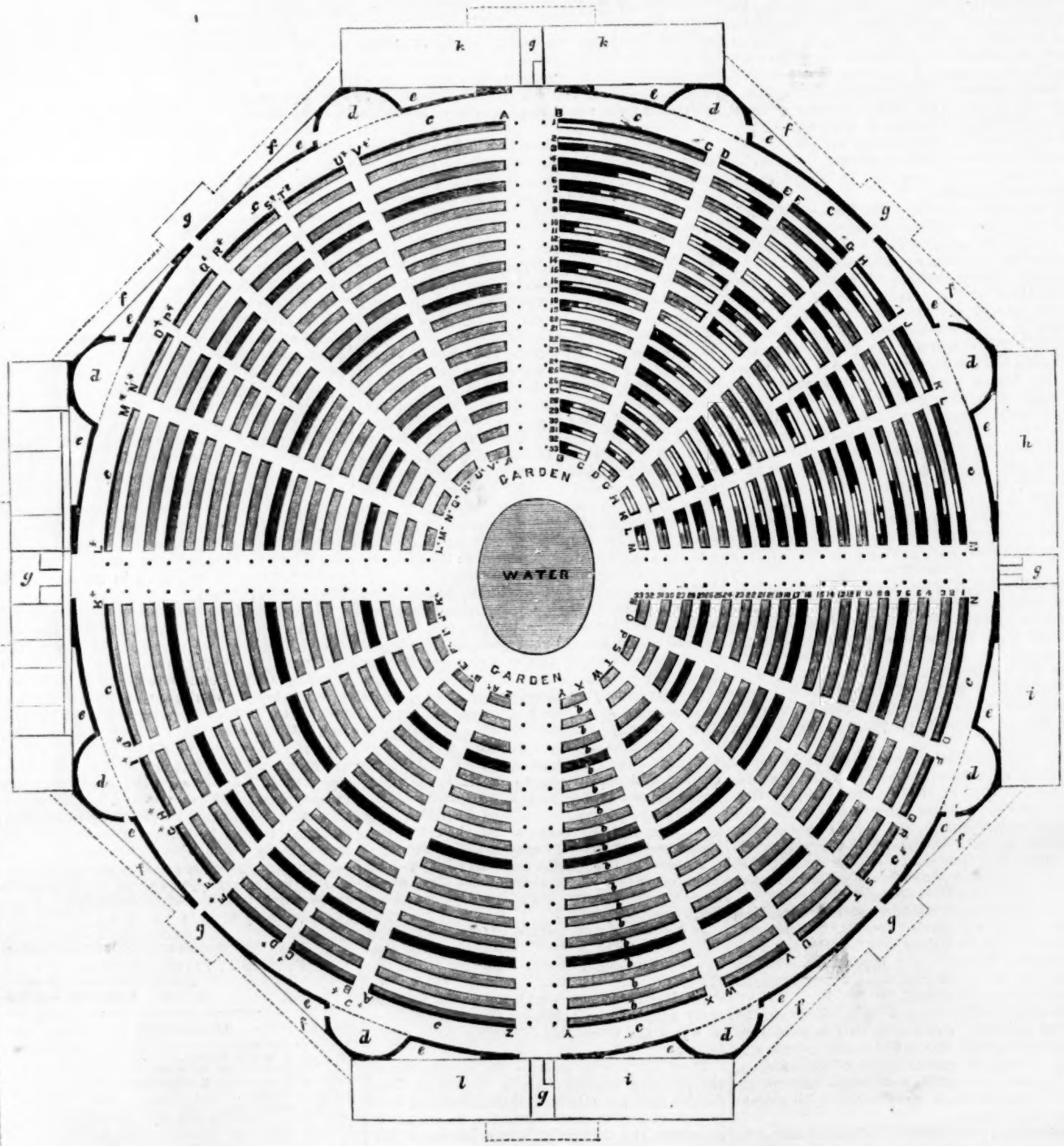
b. Avenues.
c. Fine Arts Gallery.
d. Recesses for Sculpture.
e. Retiring and Lumber Rooms.
f. Arcades.
g. Entrances.
h. Machinery in Motion.
i. Machinery at Rest.
k. Refreshment Rooms.
l. Newsroom and Exchange.
m. Rooms for Officials and Exhibitors.

DESIGN FOR AN EXHIBITION BUILDING, WITH SUGGESTION FOR METHOD OF CLASSIFYING THE PROPOSED EXHIBITION OF 1862.

BUILDING DESIGNED BY MR. E. J. PAYNE; THE SYSTEM OF CLASSIFICATION BY MR. GEORGE MAW.

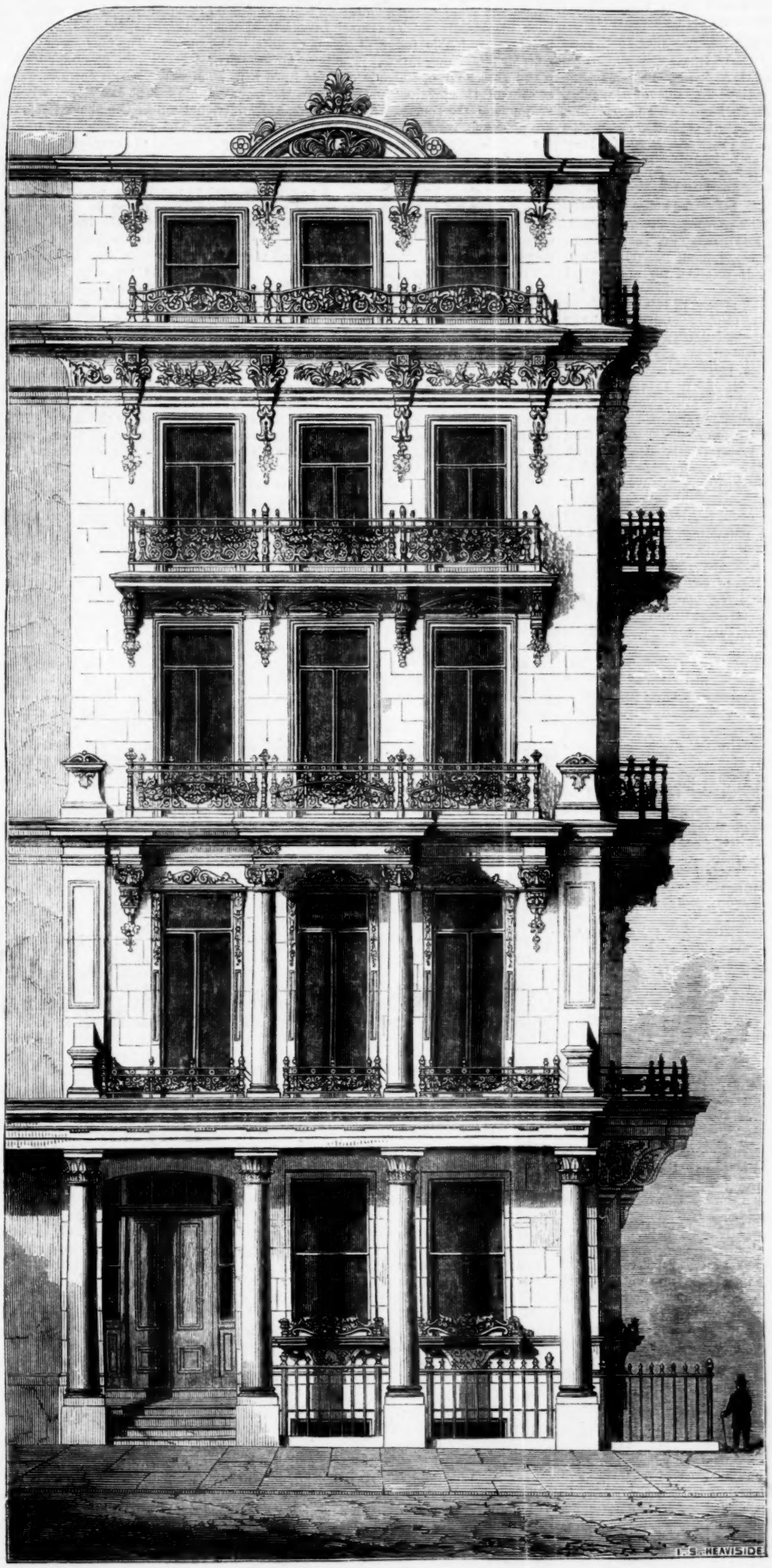


Study for Elevation of the proposed Building.



Plan.

Scale.....150 feet to 1 inch.



STREET ARCHITECTURE: PRINCE ALBERT'S ROAD, SOUTH KENSINGTON.—MR. C. J. RICHARDSON, ARCHITECT.

MR. WHATMAN'S HOUSES: PRINCE ALBERT'S ROAD, SOUTH KENSINGTON.

Amongst the new districts called into existence by the operations of the "Royal Commissioners for the Exhibition of 1851," and the increasing population of the metropolis, one of the most rapidly rising is that at Kensington Gore. The Royal Commissioners of 1851 applied their surplus funds to the purchase of much of this land. They succeeded in buying and laying together a considerable extent of it. The South Kensington Museum, the School of Art, and Picture Galleries, have been built at the lower end; and new wide roads, as the Exhibition-road, Cromwell-road, Prince Albert's-road, and others have been opened. The large central space of land, 2,200 feet long, and 1,200 feet wide, is retained for ornamental purposes connected with the advancement of art and science; and the chief part of this land, about 18 acres, has been let to the Horticultural Society; who, with the Royal Commissioners, are expending 100,000*l.* in the formation of the new Italian Gardens, of which we have given illustrations. These are bounded on the east by Princes-terrace, and on the west by Prince Albert's-road, which runs from the new handsome carriage-entrance to Hyde-park by Kensington-gardens. This land was bought by the Royal Commissioners about seven years ago, at the average price of 3,500*l.* per acre; and so extraordinary has been the demand for first-class houses in this singularly favoured spot, that some portion of the Royal Commissioners' land remaining has been sold, we are told, at above 23,000*l.* per acre, and is now about to be built upon. On two adjoining sites, also overlooking the Italian Gardens, are to be seen some large mansions, decorated externally in handsome style, and more like modern French houses than those usually seen. One of these is shown in our engraving. The proprietor is Mr. Whatman, of Vinters Park, near Maidstone, late M.P. for Maidstone and for West Kent. We are informed that his aim has been to improve and render more lively the street elevations, without extravagance of cost, by introducing ornamental iron balconies to every floor, commencing with a row of Portland stone columns on the pavement, a central porch of the same stone projecting boldly on the first floor, and by making the ironwork a principal feature in all the stories. The idea of the proprietor has been carried out by his architect, Mr. C. J. Richardson. The works have been executed by Mr. C. Aldin, one of the principal builders in this important and rising neighbourhood.

NOTES ON ARCHITECTURE IN RUSSIA.

ST. PETERSBURG.*

The general impression left by the architecture of St. Petersburg is that of barbaric greatness—vastness in dimension, pretence and feebleness in design, and coarseness and poverty in the execution. There are undoubtedly some exceptions to this sweeping estimate, but they are few and unimportant.

The environs of the city are flat and uninteresting; the islands form the only redeeming feature, and constitute one of the lions to which the attention of strangers is called. The river Neva, in its outfall, divides into a number of channels,—the Great and Little Neva, the Nevka, &c.—forming many islands, besides the large one of Vasili-ostrov, on which the northern portion of the city is built. These islands are low and flat, but have been laid out and planted with ornamental drives, plantations, shrubberies, and gardens. The intermingling of wood, water, and verdure, with palaces and villas peeping out from amongst the trees, is very fine. The winding roads extend for many miles. The extreme westerly point overlooking the Gulf of Finland is a favourite resort in the summer evenings to see the sun set on the wide expanse of waters.

The palaces of Peterhof and Tsarskoe Selo are within easy reach of St. Petersburg; the former, both by rail and steamer; the latter, by rail.

Peterhof possesses no architectural beauty, but is prettily situated on an eminence overlooking the sea. Immediately below the palace there are a series of terraces ornamented with statues and balustrades, and decorated with waterworks, in fountains, jets-d'eaux, cascades, &c.; and a straight canal, flanked with trees, extending to the beach.

Tsarskoe Selo means the "village of the emperor," and, like Potsdam in Prussia, is the mere appendage to the palaces of the locality. The original palace was built by Catherine II., in the vile Louis XV. style, forming a long *corps de logis*, with advanced wings, the front of the quadrangle being enclosed with low buildings. The interior consists of the usual interminable range of rooms *en suite*, with more or less of decoration. The most noteworthy is the amber-room, which is entirely lined with a mosaic of this precious material. In the private apartments the rooms of the Emperor Alexander are purposely retained exactly as he left them; his toilet-table, escritoire, &c., with the paper, pens, &c., as if used yesterday. Everything is remarkable for its extreme simplicity, and the absence of show or ornament. A new palace has been erected where the emperor resides when here, the old palace having been given up to the empress dowager. The imperial private apartments are quietly elegant, and show good taste in the absence of glitter and glare.

The grounds and plantations are English in style, with nothing very imperial about them. The arsenal,—a detached Gothic building,—contains a fine selection of curious mediæval armour and military relics. Another building, partly in ruins, contains Dannecker's celebrated statue of the Saviour. It is, undoubtedly, a fine work, but does not come up to the idea to be embodied, as what conception could? The figure, especially the head, wants power. The artist, in endeavouring to give intellectuality, has overdone his task. The hair is kept so thin in front as to give the idea of baldness; the lips are too full; the eyes have the pupils too prominent, and look like those of blindness.

In the grounds is situated a detached banqueting-house, erected by the Empress Catherine, where, it is said, she and her favourites indulged in secret bacchanalian orgies. In the large hall the table rose up by machinery through the floor, ready spread with viands, and each plate, as it required to be changed, on pulling a bell-handle fixed to the table, disappeared as if by magic, and was replaced by another served with the needful supply. Secrecy was thus preserved, and attendance dispensed with. The machinery is still in working order.

MOSCOW.

From St. Petersburg to Moscow the distance is 400 miles; as regards the picturesque, probably one of the most uninteresting routes of the same extent to be met with in Europe; but, as characteristic of the country and its institutions, exceedingly suggestive.

Vast, dreary, and desolate, the landscape stretches out on every side, with little or no variety of elevation. No gentle hills crowned by groves, looking down on a rich and varied scene of cultivation; no weather-beaten mountains raising their heads to the clouds, fissured with ravines and eloquent with the voices of the waters. A dismal monotony everywhere prevails. Hungry, flat plains of sand, covered with a scanty vegetation; sometimes a few enclosures where rye and oats struggle for existence; the pine forest, of small, thin, straggling trees, never far distant, advancing, receding, stopping, and recommencing, accompany us all the way. At long intervals we come upon miserable-looking villages, of the most poverty-stricken character, built of wood; the church, however, always presenting a more respectable appearance, and frequently built of brick. Occasionally, but very rarely, the mansion of a noble landed proprietor is seen, large and imposing, but with nothing about it indicating an interest in, and attachment to, the soil,—no extensive parks or ornamental gardens, nothing to elevate and interest the tiller of the ground.

The railway which connects the two capitals is well constructed, and performs the journey in twenty hours. The carriages are on the American principle, with ranges of seats on each side of a central avenue extending the full length without divisions. The stoppages are frequent and tedious, but the accommodation at the stations is very fair. The station-houses are a curious example of the "sham" system of architecture prevalent in Russia. At first sight they appear to be constructed of fine red stock-bricks, with dressed arches to the apertures, and so clever is the deception that it requires some examination to detect the imposition. They are, in reality, log-houses, built with whole logs, of small scantlings, plastered over, the joints scored, and the surface painted to imitate bricks. A log-house, showing itself honestly, and decorated according to the nature of its construction, is a pleasing object; and there are many such in Russia; but the demon of pretence has possessed the public taste in the country, and it will require probably many years before better instruction will be able to drive him out.

The city of Moscow, as a whole, is more pleasing and interesting to a stranger than St. Petersburg. It is older, more national, more naturally developed. The site is much more imposing. The nucleus of the town, the Kremlin, is situated upon an eminence overhanging the river Moskwa, which flows between banks of considerable height and slope, winding through the city not unlike the Thames at home.

The great peculiarity of Moscow is the immense number of churches which it contains. The exact number it is impossible to ascertain, but there are certainly many hundreds,—probably above 1,000. As nearly the whole of them possess steeples or domes, rising in many cases to a considerable height, the sky-line is exceedingly varied. The view from the Tower of Ivan Veliki or from the ramparts of the Kremlin, which command the range of the city, is perhaps unequalled. The multitude of steeples, not, as in London, confined to one corner of the view, but extending round the entire circuit—of all sizes, from the slender minaret to the burly tower and gigantic dome—of all forms, square, round, hexagonal, octagonal, domes, towers, turrets, spires—of all colours, red, blue, green, silver, golden (the latter predominating)—constitutes a sight which, once seen, is indelibly impressed on the memory. Viewed singly, many, perhaps most of them, would be pronounced in bad taste, the work coarse, the material poor, and the detail bad; but they have one charm—variety and picturesqueness of outline. The view, in fact, is like a stage scene on a grand scale; the same effective grouping and slap-dash execution. For many of these churches a high antiquity is claimed,—higher, certainly, than I should be disposed to admit; but the question naturally occurs,—What was the effect of the burning of the city on these serried ranks of sacred buildings? Were they destroyed and have they been rebuilt, or was the fire much more partial than has generally been supposed?

The subject has always been enveloped in much mystery; nay, an American traveller quoted by Archbishop Whately, in his "Historic Doubts," boldly denies that the city proper was ever burnt at all! Without going to this extent, an examination of the churches certainly leads to the conclusion that the fire was not of such a destructive character as to destroy many of the public buildings.

The earliest church architecture dates from the eleventh century, soon after the conversion of Russia to Christianity, and, as might have been expected, bears a rude, but strong Byzantine character. Probably, the very earliest specimen is the Church of the Assumption,—one of the three cathedrals within the inclosure of the Kremlin. It is of Greek form, with the central tambour and bulbous dome, and the usual four subsidiary ones. The details are very debased Romanesque, with long narrow slits for windows. The capitals are similar to the Norman chamfered ones. Some have flat pilasters and panels rather more classic in style.

The true Pointed architecture appears never to have penetrated to this remote region. Some of the Mediæval churches in Moscow are of a very singular and barbarous character. The most *bizarre* is the cathedral of St. Basil, erected by Ivan the Terrible at the latter end of the fifteenth century. Its plan,—

> "If shape it may be called, that shape has none,"

consists of a central cella, surrounded by a number of smaller ones connected by corridors, passages, and staircases, the various portions rising to unequal heights, and covered with domes, cones and bulbs of various forms, sizes, and colours, in which green and red predominate. The general effect, without going into detail, is not unlike that of some of the Hindoo pyramidical buildings incrusted with all sorts of fanciful ornament. The later churches are generally bad Italian in their detail, with a very free and original treatment. The material is usually brick, with the mouldings and ornaments in plaster.

There is one exception to the faults which disfigure most of the ecclesiastical buildings,—the church of the Holy Saviour,—a very large edifice, which has been in construction above twenty years, and will probably take twenty years more in completion. The plan is that of the Greek cross, with aisles. The interior is built and vaulted with brick preparatory to the lining of the walls, which, from the small specimen already executed, promises to be of the richest character, of polished marble and mosaic. The exterior is built of a light-coloured compact limestone, procured about seventy versts from Moscow.

The general style is simple and noble Byzantine, or rather Lombard in character, but dis-

* See p. 71 *ante*

playing a profusion of sculpture of a very high class. There is also in progress some very rich brasswork in the doors and windows, the taste of which is pure and elegant. The architect is Herr Ton, a German: the sculptors, Loganofsky, Romanzanoff, and Klot. The five domes which crown the roof, are gilded.

The Kremlin is to the visitor the great attraction of Moscow. The original centre and citadel of the metropolis still maintains its supremacy, both civil and ecclesiastical. Its situation is very fine, on the summit of an eminence descending on every side towards the city. The area is triangular in form, the base abutting on a steep bank washed by the waters of the river Moskwa.

The enclosure is surrounded by a lofty brick wall, surmounted by a crenellated parapet, with towers at intervals, crowned by lofty pyramidal roofs, covered with glittering green and red tiles. Some of the gates of entrance have flanking towers. One of these, the Holy Gate, is considered so sacred that all persons passing under it must take off their hats. The area of the Kremlin is very extensive, containing four churches, three of which are cathedrals, the old Tartar Palace, the Archbishop's Palace, the new Imperial Palace, Barracks for the soldiers, and several convents. The lofty tower of Ivan Veliki surmounts the whole, and, standing on the highest ground, gives a magnificent view from its summit. At its foot lies the celebrated Tsar Kolokol, the great bell of Moscow, now consecrated as a chapel, the opening caused by the fracture serving for the entrance. The new palace erected by the Emperor Nicholas within the Kremlin, partakes of the improved character which distinguishes all the works of the late potentate. The building is brick, covered with plaster; but, treated as plaster, the effect is good. The style is a kind of accommodated Byzantine and Italian, enriched with flat ornament. The interior consists of long suites of apartments and series of halls, St. George's, Alexander's, Catherine's, &c. The throne-room is exceedingly fine, and in good taste. With the exception of marble and granite columns, and ornamental decorations in malachite, lapis lazuli, &c., the whole of the architectural features are in plaster.

The new palace is connected with the old Tartar Palace, which has been restored throughout and re-decorated. The architecture is rude and *bizarre* in its form, the apartments small in dimensions; the style is derived from the Byzantine school of art.

The Foundling Hospital is one of the great lions of Moscow. It is of enormous extent, accommodating within its walls about 1,200 children. The architecture is plain, the only ornamental portion being the chapel, which occupies the centre of the building, the corridors of the upper floor expanding into the galleries, and the lower corridors converging into the lower story. The plan is the usual Greek cross, the four arms being occupied by the galleries. The interior is very beautifully and tastefully ornamented with marbles and paintings.

I was anxious to see the great Riding School of Moscow, to inspect the carpentry of its roof, 158 feet in span, but was somewhat disappointed with the result. The roof is concealed by a flat boarded ceiling, at a height of probably 30 feet from the ground, which makes the vast area of upwards of two acres appear low and gloomy. The roof, though a noble specimen of wooden carpentry, has been surpassed in span by the iron roofs of some of our railway stations, particularly the one at Birmingham, the span of which is 210 feet.

There is much in Moscow of curious, interesting, and strange, with a bearing near or more remote on architecture and art. The monasteries, with their singular mixture of the shabby and the magnificent; the bazaars, with their miles of booths, of every imaginable description; the market-places, the streets,—all present much matter for observation. Over and upon all presses the iron hand of despotism. The natural results of a grinding bureaucracy and a venal police, who are the real governors of the country, are visible on every side, depressing private enterprise, leading to uncertainty in every undertaking, and preventing the development of the real resources of the country. Russia is the dearest country in Europe, and, in proportion to its population, the poorest; the country where the peasant population are ground down to the lowest level,—where trade, skill, enterprise, manufactures, and art have all to be sought from the foreigner. Under such circumstances, architecture as an art can only be looked for in works of a public nature, or in the palaces of the higher classes. A native school cannot be expected. At the same time, since every art must be modified by the circumstance under which it is applied, it is an interesting study to observe the variations, and even the deteriorations and failures of constructive art, when carried out under influences novel and strange.

The time will assuredly arrive when the inert and slumbering mass of Russian intellect and energy shall be permeated and quickened by the instincts of freedom and expansion. Of this awakening there are already symptoms, and whenever the period shall come, there is power and vigour enough in the Russian mind to take its fair and legitimate place in the ranks of architectural as well as of other arts.

I returned home by way of Finland, Sweden, and Denmark, along a coast singularly interesting to the geological inquirer. At the various towns on the coast of Finland, now connected by regular steam communication, Viborg, Friederickhamn, Lovisa, Helsingfors, Abo, it is pleasing to mark the signs of progress—well paved and clean streets, public gardens, museums, university buildings, observatories.

At Stockholm, which, with a beautiful situation, possesses very little worth notice in an architectural point of view, a new museum is in course of construction, of a very chaste and appropriate design. The basement is granite, with a fine light-coloured freestone above. The design is Astylar, depending for its effect on fenestration, the windows being all more or less decorated. Some rather novel effects are produced by the introduction of busts and figures into the panels of pilasters at the angles. Polished marble and porphyry are introduced in inlaying the panels.

The ornamental parks of the Dier Garten, Hassel Backe, and Mose Backe are finely interspersed with wood and water.

The town of Gothenburg is well-built and improving. A new English church, a new Gothic national church in the town, and another at Klippen, a few miles down the river; and a large new theatre,—all display very respectable architectural talent.

Copenhagen contains much that is interesting to the architect, the artist, and the antiquary. The streets teem with picturesque façades of the sixteenth and seventeenth centuries. The new town has some very fine streets of the date of the early part of the last century.

The castle of Rosenborg is a great ornament to the city, with its umbrageous grounds thrown open to the public. The style is of early seventeenth century, quaint and picturesque. It is ascribed to Inigo Jones, who was architect to Christian IV. at the time of its erection.

The Exchange is a large building of the same period. The interior has been remodelled within the last few years, and is now a very noble and well-designed hall of assembly, its only defect being want of height. The Frelser's Kirke, or Church of the Saviour, is remarkable for its spire, round which an outside stair winds to its summit. The ascent, though rather formidable-looking from the exterior, is in reality very safe and easy. The summit commands a splendid view over the Baltic and the flat coast.

Thorwaldsen's Museum and the Museum of Northern Antiquities are the great glories of Copenhagen, and are well worth all the encomiums they have received. The grandeur of conception and dignity of style of the great Norse sculptor, impresses the mind with awe, and approaches the power of the antique masters more closely than the works of any other modern sculptor.

The museum of antiquities, for variety, richness, and interest, is the first of its kind in the world, and brings palpably before the eye, as well as the mind, the history of civilization in Northern Europe, from the rudest savageism to the most modern refinement, more powerfully than would be possible by any other means.

The streets of Hamburg offer many façades well worthy of study, both in the Mediæval portion and in the new lines which have risen up since the fire. The environs studded with villas, and the general aspect of the locality exhibit unmistakable signs of wealth and progress, such as is not often met with in continental cities. The Church of St. Nicholas, under the auspices of Mr. G. G. Scott, is slowly advancing towards completion; and it is to be hoped that its accomplished designer may be spared to see the full development of his noble conceptions.

Although not equal architecturally to the southern half of Europe, there is much in the northern states well worth visiting, for the architect and antiquary; and I do not know that, for combining recreation, healthy excitement, and the charm of novelty, six weeks or two months of summer travel could be better expended than in a trip to the countries surrounding the Baltic.

J. A. PICTON.

MR. SMIRKE'S SECOND LECTURE ON ARCHITECTURE, AT THE ROYAL ACADEMY.*

ERRORS IN DESIGN.

THE near relationship that architecture and sculpture bear to each other is undeniable. The mutual assistance that these arts are able to lend to each other, the similarity in many respects of the objects pursued by the two arts, would seem to render the cultivation of them by the same individual, if not essential to excellence, at all events a powerful auxiliary in establishing the character of a great artist; yet, "so vast is art, so narrow human wit," that we can with difficulty point to any individual who has in himself united those arts with that equality of power and intelligence which are necessary in order to prevent the one art from over-ruling the other.

Taking, for the purposes of comparison, perhaps the two most prominent artists that the world has produced, Phidias and Michelangelo, we observe (so far, at least, as we know or have the means of judging of the former) that whilst in Phidias's works the sculpture was doubtless made essential to the due effect of his architecture, it was, nevertheless, always subordinated to it, and was never permitted to over-ride it: the leading architectural lines of his building, as the metopes, the friezes, and the tympanum, were in no case allowed to be interfered with by the sculpture, but retained invariably their undisturbed continuity and distinctness. Intimately intermixed as the sculpture was with the architecture, it kept its place as a mere decorative expletive; an *ornament* in fact;—full, no doubt, of significance and perfectly appropriate in character, both as to treatment and design, but still a non-essential ornament.

In the works of the other great genius whom I have named, we find these conditions reversed: although undeniably great in architecture, and great in sculpture, I think that the common voice of posterity proclaims him to have been far more a sculptor than an architect.

In the very instance to which I have adverted, the Medici monument, the feeling of the sculptor obviously preponderated. It suited his composition to place his figures recumbent on the sloping sides of a pediment; and he, therefore, so placed them, omitting the intervening apex of the pediment; thus committing, it is true, an architectural absurdity, whilst he produced a picturesque arrangement of his sculpture, which was all he seemed to have cared for. We may say, however, in his defence, that, in the arrangement of sculptured groups of figures, the modification of known architectural members may be regarded as a poetical rendering of them, so as to make them subservient to the exigencies of high art.

It would be by no means difficult greatly to multiply instances of a similar sculpturesque bias in the works of this great man. I will, however, adduce but one other. In the Chiesa degli Angeli, at Rome, erected by Michelangelo, upon the site, and partly upon the walls, and with the materials, of an ancient imperial palace, great pictorial effect has been produced, but in singular defiance of propriety.

A huge circular tablet is so laid over the face of a wall which he desired to relieve from undue heaviness, as to overlay and almost to conceal the architectural lines; conveying the idea of a distinct object suspended against the wall; whilst it was, in fact, built into it, and formed an integral part of the masonry of the church.

There can be no doubt, I think, in the mind of any unprejudiced critic, that the example set us by the great sculptor of antiquity, of making his sculpture strictly subordinate to the architecture, is the more consistent with good sense and sound judgment. However elaborately architecture may be decorated, and enlivened by the genius of sculpture, all the leading and essential lines of the composition should be dictated by its structural requirements, and should at least appear to express its main constructive features. There should, I think, be no intimate blending together of the constructive and purely decorative features: let them perfectly harmonise and combine together to make a pleasing whole, but let their respective limits never be ambiguous.

In the best age of Mediæval art this rule will,

* See page 88, *ante*.

I think, be found to have been rarely departed from. It was in proportion as it degenerated that this principle ceased to have been acted upon, and sculpturesque excesses so came to be committed. The carver overruled the mason until there arose those wonderful petrifactions, as it were, of architecture which stood as if by a miracle; for their anatomy was concealed from view, and they appeared rather to have grown than to have been built up;—the creation rather of vegetable life than of mechanical skill. I might refer as instances to the pendentive roofs of King's College Chapel, and other similar structures, and to the singular productions of Kraft and others at Nüremburg.

In the age which followed the Mediæval period the best works fully illustrate the truth of the principle that would teach us to keep clearly defined, in due subordination, and in a right relation to each other, the constructive and decorative arts.

Great purity of design in this respect usually existed in the short but brilliant period of the Early Renaissance.

We shall seek in vain among the best works of that period for examples of the corrupt taste that would seem to abhor the simple outlines of that geometry on which the whole fabric of our art is founded. Although rich, occasionally even to a fault, in carved decoration, you will find those decorations ever kept within the limits of the frieze, or panel, or spandril, or whatever other architectural compartment may have been left open for the ornamentists after the requirements of the masons had been provided for. Thus their buildings preserved generally a great simplicity of outline and distinctness of form, although they may have presented a rich display of perhaps the most beautiful ornamentation that art has yet bequeathed to us.

As, however, renascent art advanced, it gradually departed from this wholesome rule, and the wider the departure the baser became the prevalent character of the art, until the improperly called Classic style became disfigured by a multitude of gross errors. The most manifest structural requirements were often studiously concealed: the ordinary and characteristic features of architecture were lost amidst clouds and angels floating by the aid of hidden cramps and ties; and a great deal of really ingenious construction was thrown away in simulating impossible construction.

The principle which I urge on your attention may be illustrated by reference to what I believe to be a fundamental rule in the sculpture of the human figure, which forbids such a disposition of drapery as may wholly obscure or even render doubtful the actual position of the several limbs. In the work of a good master, however enveloped a figure may be in accessories, the imagination is never at a loss to determine its attitude or *pose*. So it should be with a building. Its anatomy should be ever intelligible, however richly clothed it may be in embellishments.

I dwell the more on this subject because I think I am justified in expressing my fear, that there is a strong tendency, in the practice of the present day, to overstep the limits to which ornament should be confined. Ornament is a most pleasing handmaid, but a very unreasonable and dangerous mistress.

There is another kindred error to which I think it may be profitable that I should advert. It is in some respects the converse of that which I have just reprobated, and consists of an attempt to give to mere ornament a false or affected *utility*. We sometimes may see a heavy weight of masonry, perhaps an integral part of a fabric, affecting to rest upon some manifestly insufficient basis, such as on foliage of the most delicate and fragile nature, or perhaps upon the edge of a shield, obviously unfit to carry more than its own weight.

This is an anomaly which no beauty of execution, nor cleverness of treatment, can justify. Painters may, no doubt, be readily permitted to represent bodies of very appreciable weight reposing on a mist. Aurora may freely drive her wheeled chariot over the trackless clouds, for their paintings are but the embodiment of mere mental visions. These forms are but as words addressed to the mind's eye, while the architect has to deal with substantial realities. Whatever he does must be conformable, not only with plain reason, but with static laws.

The Pompeian decorator is quite at liberty to indulge his fancy in strange impossibilities: his Cupid may emerge from the calix of a blossom, and may poise on the tip of his wing a column, or a whole temple, if he will: it is but a painter's dream after all. But when an architect so forgets the proprieties of his art as to realize in stone these vagaries, and places, or seems to place, a material burthen upon these utterly inadequate supports, he is guilty of a frivolity unworthy of the character of his art. It is not that we need altogether condemn the use of these Cupids and blossoms, but let them be superfluous adjuncts. Let the duty of a corbel or a capital be performed by a stone visibly shaped to its purpose, and adequate to its task, and *then* overlay it as you will: the reins may *then* be given to invention, to clothe that stone with whatever natural beauties the good taste of the sculptor may suggest to him as suitable and agreeable.

In like manner, when we see the smoke of some laundry chimney issuing from among the leaves of some fictitious plant, however beautifully natural the leaves may appear, we repudiate the conceit as a gross breach of good taste in the artist who so misapplied the resources of his art.

But I have wandered widely from my theme. The real, practical importance of the principle which I urge upon you must be my apology.

I was adverting with regret to the anomaly of the broken pediment; an error which struck deep root, and was the parent stock of an unaccountable variety of censurable forms. Strange it is that art is so prone to submit to the influence of fancy or caprice, as if the eye was ever *craving* for new forms. The simple, sensible, and strictly unobjectionable pediment thus became debased into a useless and ridiculous excrescence, under the impulse of tendencies which seem to be inherent in our nature.

A like tendency betrays itself in a variety of ways; in nothing perhaps more visibly and viciously than in *costume*. Thus buttons are placed where they cannot possibly be applied to any useful purpose, justified alone by long usage, and by the consequent prejudices of the eye, and thus shapes will long outlive the uses which had dictated them. So it is that architects are occasionally found erecting an array of buttresses, not because there is any lateral thrust to meet, but because they constitute a customary feature of a certain style.

Having dwelt long on the errors into which we are liable to be seduced by a disregard of the legitimate purposes of those two important component parts of architectural composition, the *column* and the *pediment*; it remains for me to point out to you, with reprobation, another, and perhaps still grosser, error in the misapplication of the entire portico.

The unanimity is somewhat remarkable with which all critics, of every school and age, have agreed to admire the Greek portico, as combining all the highest qualities of art in their purest and most complete form; and the great beauty of this model of symmetrical composition is enhanced by a sense of its obvious utility as a place of external shelter.

For many centuries exclusively the distinguishing feature of temples, the portico was seldom permitted to be used in domestic architecture, until the date of Augustus. From that period downwards it has never ceased to be applied to any and every species of structure needed by man, and it must be admitted often without the slightest appearance of necessity or utility.

The same critical remarks which I have already made in respect to the erection of a column as an ornament, or as a mere pedestal, and not as a support (which is essentially and exclusively its special duty), are also applicable to the columnar portico in all cases where neither shade nor shelter is of any appreciable value. To erect a portico in a position obviously inaccessible is an idle squandering of masonry, with which the architects of the best days of Classic art cannot be charged.

A blind and unreasoning habit of repeating forms, without due regard to their purpose, has been among the worst faults of modern art. To build a gable, or a portico and pediment, without any roof behind to justify or call for its use, or beneath whose shelter no man can betake himself, is an act which no reasoning critic, whatever be his admiration of the portico itself, ought to sanction.

Like the small arcades which we so often see covering the apses of early Romanesque and Mediæval churches, yet often perfectly inaccessible, and convertible to no possible use, we can only attempt their justification on the ground of picturesqueness or beauty, or because they serve to cloak a blank wall, or because they present a pleasing chiaroscuro. It may be that there are occasions when these *are* sufficient and satisfactory reasons. The architect very imperfectly fulfils his mission if he does not gratify the eye whilst satisfying the graver requirements of his art. All that I would insist upon is that the more prominent and conspicuous features of a design should not be mere unserviceable appendages.

With regard to the use of colonnades partially built into a wall, as we see exemplified at the Banqueting-hall in Whitehall, it is not uncommon for architectural critics to condemn the practice as a departure from the dignity and real use of columns, and as something false or absurd.

I am not, however, disposed to coincide in this view; and I can see no valid reason for condemning those engaged colonnades. Tested by the standard of common sense, I see no sufficient ground for such condemnation. Columns are points of support; and we may with equal correctness regard them in that light, whether insulated or engaged; for as supports they are equally valid in either case. We may regard the wall intervening between engaged columns as the means of *enclosure*, not of *support*;—assisting columns, it may be, in the support of the entablature, but yet not an essential and integral part of the fabric. The great Doric temple at Agrigentum, and the Erecthæum at Athens, suffice to show that, even in the best period of Greek art, this practice was not held to be opposed to the canons of good taste.

The critics who would condemn engaged columns have of course a wide field for the exercise of their censorship in the engaged pillars or wall-shafts of Mediæval art, the use of which is an exactly analogous practice, inasmuch as they represent the points of support of the arches and vaulting which spring from their capitals. The truth is, that there is perfect masonic propriety, whether in the wall shafts of a cathedral or in the engaged pillars of a Greek temple. They represent an accumulation of power at the particular point of the wall on which the principal weight is charged; and not only have they constructive truth to justify them, but also a great æsthetic value. These vertical lines of support convey to the mind the idea of the active and efficient support of any particular imposed weight far more satisfactorily than can be effected by presenting a plain unbroken wall of apparently uniform solidity and strength; and this idea is still more forcibly and distinctly produced on the mind when the vertical engaged shafts are of different colour and material from that of the general surface of the wall. This practice, so prevalent, both in Mediæval and Classic art, gave rise to additional *beauty* and *variety* by the use of coloured and polished marbles.

Although I have justified and defended these engaged columns as true and legitimate architecture, I am, nevertheless, by no means inclined to encourage the gratuitous or too frequent use of them. There can be no doubt whatever that, in lightness and elegance of effect, advanced and insulated pillars, telling out distinctly and brightly against the lower tone of the recessed wall behind them, produce by far the most artistic and pleasing effect.

The object with which I set out in making these observations was to press upon your attention what I conceive to be one of the most important principles of design; namely, that every form in architecture should be, or at least appear to be, true to the purpose to which it is applied. The principle is of the widest application, and appears to me to be valid alike for the smallest objects of design and for those larger, more important, features to which my observations have been more especially directed.

When Thucydides is deploring the moral deterioration of Greece, occasioned by the baneful influence of the civil wars on the manners of his countrymen, he says that a sort of duplicity had entered into the Greek mode of speech: false terms were introduced: names of honour were applied to the base, and of baseness to the honourable; and he adduces this evil tendency as one of the most striking signs of the times.

It is true that in uttering these lamentations Thucydides bears singular testimony to the general purity of Greek sentiment, when we find that the mere habit of misapplying terms of honour and of depreciation should be regarded by the historian as a national stigma, and as a serious public reproach; still his remark has great significance, and may convey a useful lesson even to us as artists. The clearsighted ancient historian and moralist could read the signs of the times in these unobtrusive and apparently insignificant indications: he saw that the habitual use of unfitting phrases, and the untruthful application of words, were evidences of an incipient national decay and deterioration. May we not draw like conclusions when we see an habitual neglect of

truth in productions of art? And is it not a duty becoming in all who are in a position to exercise any influence *whatever* on the mind of the young student, to strenuously endeavour to deter him from that downward course which leads to debasement of style, and with all possible earnestness to impress him with a sense of the beauty of truth.

Such, certainly, I conceive to be my duty here. Weak and faltering as my words may be, and though I may not be able to defend myself from the imputation of having set some bad examples; still I feel that I should betray the cause which it is at once my duty and my pride to advocate, were I not to use my best exertions to encourage the student in art, to seek *not* only that which is ornamental, or picturesque—not *only* that which affords a display of the most agreeable flow of lines, or most attractive in composition—not *only* that which presents the richest groups of decorative feature,—but to seek, *above* all things and *before* all things, that which is fitting in form and truthful in character.

JAPANESE GENIUS FOR IMITATION.

THE astonishing aptitude of the Japanese for imitating everything they see appears to be a constant source of interest and amusement to the members of the Legations; and some of the most impossible things to do appear to have been given to some of the more ingenious workmen, in order to try them, rather than with any hope of success; but a failure is said to be very rare. Chubb's lock was given to a clever lacquer-ware man merely to fix on a box which had been ordered. The box was duly produced, the lock admirably fitted, but something drew attention to the key; when, upon minute inspection, it was found that both lock and key were imitations! Friend Sabie, the name of the ingenious individual, had been so struck with the beauty and perfection of the lock, that in an incredibly short time he had succeeded in finding a workman to produce so exact a counterfeit, that it was by the merest accident the trick was discovered. This is an anecdote which Mr. Chubb, we dare say, will scarcely "take in," whatever others may do. If the Chinese, at all events, have, from time immemorial, as we are told, possessed the principle of the Brahma lock, the Japanese may also be skilled in lock-making, and may have appropriated Chubb's lock in the way indicated. Many of our more recent discoveries are now, it is said, found to have been known in Japan ages ago. Take lithochrome printing, for instance, by which (only within the last twenty years) a perfect imitation of the effects of water-colours may be obtained from a series of stones, printing in different colours. The same thing is everywhere to be seen in Japan. The process is the same, only wooden blocks are used instead of stone. The effect is not so fine, certainly, but the principle is there, and reduced to practice. They are not artists in the sense in which we should use the term; yet many of their smaller ivory carvings of groups of figures, generally grotesque, are held to be marvels of expression and skill in the handling of the chisel, full of character and of humour. So much for the aptitude and capacity of the Japanese workmen; and there seems little doubt that, if anything like a free competition for a large trade arose, they would hold their own against the best workmen of Europe, and might prove formidable rivals to Manchester and Birmingham. Their sword-blades have the reputation of being superior to any now produced in Europe.

MONUMENTAL.

Monument for Cork.—Messrs. Edwardes, Brothers, of Newman-street, Oxford-street, have on view a costly and in many respects well-executed monument, in memory of a late eminent citizen of Cork, Mr. James Daly. In the centre a draped figure of Victory, holding aloft a wreath of laurel, is poised upon a small black marble sarcophagus, having at its apex a gilt ball, which bears an inscription. At each end of the sarcophagus is a figure seated,—the left, a female denoting Faith, and the right, a male, Resignation. Double pilasters on each side, of white marble, bound the monument. The background and upper part are of dark marble. Something is needed to bind together, at the top, the three white lines formed by the pilasters and the figure of Victory.—The same firm has executed some fine statuary marble chimney-pieces. Such of our readers as may need first-class marblework may usefully visit these warerooms.

A Monument to Dr. John Leyden is to be erected in the centre of the level Green at Denholm, in Roxburghshire, Scotland; which town was his birthplace. The design is Gothic, of the Early Decorated period. It represents an ornamented pyramidal structure of 40 feet in height, and partakes of the elements of the Venetian style of Gothic. The shafts of the columns are to be of red granite polished. The central part of it is enriched with Gothic carving and sculptured figures. A large canopy or opening occupies the central space, bounded by Moorish or horse-shoe arches. This space may be occupied by a draped cinerary urn. Objections have been urged against a bust of Leyden (which was at one time proposed), on the ground that there exists no likeness of him. A triangular arch springs from the summit of this open canopy, and forms a conspicuous feature in the structure: its outline is crocketed, and the centre is occupied by a circular floral ornament. On each of the angles is placed a figure of an evangelist. A tall angular spire surmounts the whole, broken into stages by cross lines of ornamental tracery. The structure will thus present in miniature somewhat of the form of Sir Walter Scott's monument in Edinburgh. The cost will be more than was anticipated; and, unless assisted by further contributions, the committee will find it necessary to curtail some of the ornaments.

The Goldsmith Statue at Dublin will be placed within the open space before the College front. In the statuette of Mr. Foley's design, the poet is represented standing, his head slightly drooped, as in meditation, his left hand holding a book or tablet, and his right hand, which is raised towards the face, holds a pencil. There is no cloak or drapery. The large and massive head and heavy immobile features of the "inspired idiot" render him a difficult subject to the sculptor. Mr. Foley has nevertheless produced a beautiful statuette.

PROVINCIAL NEWS.

Sheffield.—The members of the Sheffield Club are about to erect a house in Norfolk-street, Sheffield, for the better accommodation of their visitors and friends. The present premises have been occupied since the formation of the club seventeen years since, and the greatly increased numbers who frequent them have rendered it absolutely necessary to take the present step. It is expected that the work will be immediately proceeded with. The contemplated expenditure is (including the site) 6,000*l.* Mr. M. E. Hadfield is the architect. The site which has been secured is particularly eligibly situated about midway in Norfolk-street, and very nearly opposite to the new show-rooms of Messrs. Rodgers & Sons.

Garston (Liverpool).—The opening of the new Lecture and Reading room at Garston, the foundation-stone of which was laid in April last, has just been celebrated. The edifice is situated near the centre of the village, and has been erected from designs by Messrs. J. W. & J. Hay, of Liverpool. It is of a mixed style of architecture, partaking principally of the Early English. It contains a lecture-room, affording accommodation for between 300 and 400 persons. At one end is a smoking or refreshment room, and at the front an entrance-hall. Adjoining is the keeper's residence. The entire block of building is of a simple character. The hall is divided into six bays by buttresses supporting the ribs of the high-pitched roof, the bays on one side being pierced with large windows of three lights, filled with rough plates of glass in panels. In the front elevation there are two windows of double trefoil-headed lights, with a trefoil light in the apex of the gable. The building is of brick, with stone dressings, has cost 1,100*l.*, including the fittings, and the entire work has been performed by Mr. Jones, of Grassendale, the contractor. The site was given by Mr. George Heald, of Garston Lodge, and the cost is to be defrayed by the subscriptions of the working men of the village—the capital being raised by 1*l.* shares—assisted by the influential inhabitants of the locality. The management of the institution is vested in eight trustees, four churchmen and four dissenters.

Lincoln.—The Directors of the Lincoln Gas Company have received the following tenders for new works:—Three tenders for a new gas-holder, one of 1,570*l.*, with 3*l.* per ton allowance for the old metal; the second, 1,497*l.*, with 2*l.* allowance; the third, 1,450*l*, with 2*l.* allowance. The last was accepted. The holder is to be constructed on the telescopic principle by a Birmingham engineer.

Weedon.—A new girls'-school has been opened at Weedon. The building is in the Old English style, and is composed of red bricks, with Bath stone dressings. At one end, and adjoining the school, is a house for the mistress. This forms a wing at one end of the building, and the class-room forms a wing at the other. The roof inside is an open Gothic, stained and varnished. Mr. E. F. Law was the architect, and the works have been carried out under his superintendence.

Dagenham.—The cost of the proposed dock at Dagenham-reach is estimated at 100,000*l.*

Portsmouth.—The contractor for the Barrack Extension works, about to be carried out at the junction of the Cambridge with Clarence Barracks, has commenced operations by pulling down the houses in Keppel-row. Two new and spacious pavilions will be erected upon the ground gained, and the erection of them will be commenced as soon as the old materials are cleared away. Mr. Bull, of Southampton, is the contractor for these works, which are to be completed before the 1st of January, 1862, his contract being just under 6,000*l.* A large area will be gained to the Cambridge Barracks by these additions, and a nearer means of access for carriage traffic in the route from King William's-gate to the Landport-gate.

Isle of Wight.—The new Steamboat Pier at West Cowes has been commenced. The two causeways are being removed, and the present wooden pier is to be taken down, and the quay reduced in height. The contract for this work has been taken by Mr. Thomas Wheeler: for the dolphins, the contract is taken by Mr. George Wheeler. The contracts for the iron pontoon and the new pier have been taken at Southampton.

Inverness.—At a recent meeting of the Inverness Town Council, according to the local *Advertiser*, a report was handed in by the Petty Customs' and Markets' Committee, proposing the erection of new markets for the town, and submitting a plan for the same. The committee propose the erection on the present market ground of an arcade, lighted from the roof, and 20 feet in height, 220 feet in length, to be paved with flags, and having stalls for fleshers, meal-dealers, &c.; a vegetable, fruit, and fish market, a market for poultry, eggs, &c.; also, the erection of a hotel; the whole of which is estimated not to exceed 4,000*l.*

THE MODE OF MEASURING WORK, AND TAKING OUT QUANTITIES IN DUBLIN.

A CORRESPONDENT wishes to be informed if the mode of taking out quantities as practised in Dublin is the same as that adopted in London, and if not, whether the difference be material. In reply to the inquiry, though the system of measurement in Dublin is essentially the same as that practised in London, there are some local differences. Brickwork is measured by the cube yard, or superficial yard, reduced to 9 inches, or by the Irish perch of 21 superficial feet, 1 foot 6 inches thick. The English rod is unknown. The measurement of cut-stone work is also different, the labour being taken by the girth of the exposed face of the stone as finished, without consideration of previous labour.

In plastering the whole square of the ceiling is measured, without deduction for cornice projection, and four mitres are allowed to each room, all others being extra; but the Dublin system may be said to be more like that of London than that of any other town, the only important difference being in the cut-stone work. They are much more fond of taking lineal measurement and numbering items than in London.

METROPOLITAN WATER SUPPLY.

ON 6th February a paper on this subject was read at the Society of Arts by Mr. G. R. Burnell, C.E., and a discussion followed, in which various gentlemen took part. The conclusions with which Mr. Burnell closed his paper will give some general idea of the views expressed in it; and to this we may add a portion of the chairman's summing up at the close of the discussion.

The conclusions, said Mr. Burnell, I am induced to draw from a careful study of the question of the present condition of the London water supply are as follow:—

"1st. I think that the quality of the water is on the whole extremely good, and that the companies take every precaution in their power to maintain its character.

2nd. I am convinced that it is utterly impossible to secure a supply which should attain the supposed ideal type, even if that were desirable, which I do not believe.

3rd. I think that the greatest present improvement in the quality of the London waters would be effected by rendering it impossible for the population on the banks of the Upper Thames and its affluents to use the river as their outfall sewers. With all the local impurities thus cast into the Thames, the quantity of organic matters its waters contain do not, however, exceed, in any notable

quantity, those contained in deep-seated chalk springs, which cannot possibly receive sewage.

4th. It seems to me that any extension of our present supplies should be sought for rather on the east than on the west of London, and on the edges of some of the great lines of disturbance there existing.

5th. It seems also to me that it would be a mere waste of money to attempt to execute any system of catchwater supply.

6th and lastly. I think that there is both great injustice and great want of a true spirit of philosophy in the insinuations which are now constantly urged by the Registrar-General on the subject of the impurity of the London waters. Pure water does not exist in nature, for even rain water contains appreciable quantities of ammonia."

After a discussion, in which Messrs. S. C. Homersham, J. T. Bateman, Lott, Spencer, F. Braithwaite, W. Hawes, and A. S. Harrison, Professor Tennant, and Dr. Wyld, took part; the chairman, Sir Thomas Phillips, said:—

The discussions of this society, useful as they were, were sometimes of a somewhat discursive character, and certainly they had had that evening topics which were not quite pertinent to the subject before them. Mr. Bateman, in a very interesting description of the water supply of Glasgow and Manchester, had sought to claim the large and sinewy frames of some of his Scottish friends as the products of soft water, whilst he had pointed to the feeble and degenerate growth of some of our southern people as the unfortunate results of hard water. If the paper which had been read that evening painted in too favourable colours the water supply of the metropolis, the reverse of the picture had been offered to them by Mr. Homersham and other speakers, in terms not over flattering to the water companies. Much of the value of these meetings of the society arose from the freedom of discussion which prevailed in this room, and that correction which exaggerated statements were thus sure to receive. Notwithstanding all they had heard, he hoped the audience would go away with no great amount of discomfort from the fear that they would not have a sufficient supply of good water for their use during the year 1861. He must confess he went very far with Mr. Hawes in the distaste that gentleman had expressed against too much interference in these matters on the part of municipal bodies.

It may be useful here to give a summary of the condition of the actual water supply of London from the paper under notice.

Subsequently to the passing of the Metropolis Water Act of 1852, all the companies have been obliged to remove their sources of supply from positions where the waters were likely to be affected by the tidal action, or by the emanations of large manufacturing districts. The West Middlesex, Grand Junction, and Southwark Companies take their water from the same spot on the banks of the Thames, above the village of Hampton, and above the second lock on the navigation. The Lambeth and Chelsea Companies take their water from Kingston, above the Teddington lock. The East London and the New River Companies take their water from the Lea, the first from a lateral branch from the main stream given off above Clapton, and the latter from the river above Ware. The North Kent Company takes its waters principally from its wells, and partially from the Ravensbourne. In all cases, the companies are bound to filter their waters. All the storeage reservoirs are covered.

The capital embarked in these undertakings is enormous. From the returns to the General Board of Health, it seems that the total cost, up to 1856, had been not less than 7,102,823*l.*; and, at the present day, it cannot be much below 7½ millions. In 1856, the aggregate nominal steam power employed was not less than 7,254 horses, and the quantity of water pumped was 81,025,842 gallons per day on the average of the year. The present rate of supply must be near 100,000,000 gallons per day; or at the rate of about 49 gallons per head of the inhabitants. The companies have spent 2½ millions sterling for the removal of their sources of supply, for the filtration of their waters, and for the improvement of their distribution, since the year 1852.

Although we still require improvements in our water supply, notwithstanding the rose-coloured tint which Mr. Burnell kindly throws over it; it may be amusing to look back to the state of matters at rather a remote period, as a foil to the present, but an encouragement to hopes for the future.

In St. Martin's, Ludgate, in 1585, it was agreed in vestry that there should be three water-bearers, "and no more;" and they be all men, and not any of them be wives or servants; and that they shall carry no water* for any person dwelling out of the parish; and also that, if any of them set out any tubs or bottles, as heretofore they have done, to the annoyance of the street, every such person should be disabled and disallowed to carry any water from the conduit. Also it is ordered and agreed by a vestry, held on the 12th of January, in the thirtieth year of the reign of our Lady Queen Elizabeth, that no manner of servant, nor any water-bearer, shall be at the conduit at service-time, nor leave there any tankard or pail; for if they do so offend, the churchwardens shall take the said tankard or pail, and keep them until such time that the said offender do come and put in the poor man's chest 4d.; and then the said party shall have his tankard again.

* The tankards mentioned as water-carrying vessels seem to have contained six gallons of water each, and the cost was 2d. We may here remark that Mr. Burnell, in his paper, estimates, without any reference to this ancient tankard, that, at the present day, "no one really uses much more than six gallons per day," or about one-seventh part of the forty gallons per head at which he estimates the actual supply.

NORTHAMPTON NEW TOWN HALL COMPETITION.

THE Town Council of Northampton have been discussing the question of selection from the forty designs sent in for their new Town Hall; and, with some little exception, they show, in the meantime, a very commendatory diffidence as to their own ability to decide on the actual merits of the many plans proposed to them. One sensible councillor declared that the consideration of a single plan for "that house in the Drapery" had been too much for him: the Estate Committee (to whom the matter of procuring designs had been referred by the Council), were resolved, he said, to call in some eminent architect if the decision were left to them. Mr. Hensman proposed that the whole of the plans be referred to the President of the Institute of British Architects, or to some other architect totally unconnected with the town. The question of exhibiting the designs before coming to a decision was not decided on, neither was that of calling in an architect; but in the meantime it was resolved to have them exhibited, for the inspection of the Council, for a fortnight, after which time a special meeting to be called to consider as to them.

NOTES ON COMPETITIONS.

Wolverhampton New Public Buildings present a new phase in competitions. The Committee intend to ascertain which competitor furnishes a correct estimate of the cost of his design; sagely reserving to themselves the right to *reject* the best if the cost exceed the sum stated by the *author*. No clue whatever is given to the amount *likely* to be expended on these works, whilst "the mode of ascertaining the cost (is) to be in the discretion of the Committee."

Premium 50*l.* is to merge into the commission if the competitor be employed to superintend the work.

INVESTIGATOR.

SELECTION OF THE STONE FOR THE HOUSES OF PARLIAMENT.

SIR,—I forward the inclosed report for publication. Pressure of time did not permit me to read it at the Institute, but I am anxious that it should be understood that, from the advice tendered to him, my father had no reason to anticipate failure as regards the stone of the New Palace at Westminster.

EDWARD M. BARRY.

"29, Clifton street, 10th April, 1853.

DEAR SIR,—In compliance with your instructions, I visited, on the 8th and 9th of last February, the quarries at North Anston, from which the stone for the exterior of the New Palace at Westminster is now being obtained by Mr. Jay, the present contractor; and I have to report to you that the stone which he is now quarrying forms part of the same beds of magnesian limestone as those which were worked by the late contractor, Mr. Grissell, in pursuance of the recommendation to that effect in the report of the commission appointed for the purpose of selecting a fit and proper stone for the New Palace in the year 1838. The stone which is now obtained continues to be of the same excellent quality as that which has been hitherto selected for the New Palace at Westminster. Mr. Jay's quarries are contiguous to those of Mr. Grissell: they contain the same number of beds, varying in thickness from 8 to 39 inches, and measuring together a total thickness of 23 feet. Specimen blocks, which I marked both in Mr. Jay's and Mr. Grissell's quarries, have since been forwarded to me in London. I have had those blocks worked into mouldings, &c., under my own inspection, and I cannot, after a careful examination, discover any difference whatever in their fitness for architectural and sculptural purposes, nor can I detect any variation in their chemical properties.—I remain, &c.,

To Sir Charles Barry. (Signed) C. H. SMITH."

CONDITION OF PARTS OF SALFORD.

YOU have rightly published much in reference to the unhealthy condition of Salford, but I do not think anything which has been exposed through the *Builder* is so bad as that which I now bring before your notice.

There are four rows of cottages, situate in West Elizabeth-street, West Wellington-street, Ann-street, and Charles-street, all of them leading out of Hope-street, Salford. These cottages, about 35 or more in all, are back to back, and have eight privies and two ash-pits to serve the whole.

These privies and ash-pits run under the *bedrooms* of four of the cottages: they are nearly dark, only receiving the reflected light from the nearly equally dark walls of the passage. When I saw them, those nearest the street were in a most filthy state: the two privies and the ash-pit, which are in the middle of the passage, no doubt, were worse, but as there was little or no light admitted, I could not see, and the stench was so intolerable that I was glad to get away with the few particulars I now send you. Herewith, I enclose you a rough plan of the place referred to, and also my name and address, and shall be very glad to substantiate what is here brought forward.

MANCHESTER.

SIZE OF GAS-PIPES.

WILL you allow me to offer a word of warning to builders and their gas-fitters.

I have just been called in to assist in getting a supply of gas to the top of a two-story house, because, when the house was being built, the economical builder or dishonest gas-fitter chose to insert ⅜ iron pipe in the walls and flooring for the supply of the four upper rooms, instead of using, as I always recommend, ½ iron. It may be thought that ⅜ pipe is large enough: it may be so long as the pipe does not corrode, but that corrosion is either not thought of or is forgotten by the fitter,—and not one single connector or long screw do I find. The result is, that as the pipe is hopelessly choked, I must either have the pipe cut out of the newly-papered walls, or I must run up a pipe outside, either of which modes is troublesome and expensive, and ought not to occur in a private house at 85*l.* rental.

A GAS-INSPECTOR.

FRAUDULENT TRADE MARKS.

THIS is a subject which is at present exciting no little interest amongst our manufacturers of various goods. The trade marks of firms noted in their several provinces for good articles are forged by foreign manufacturers of rubbishy goods, which are then forwarded to England; where, of course, they have not much chance of a permanent sale; but whence they are mostly again exported, as English goods; so as to impose upon the foreign purchaser, and seriously to injure the good fame of the English manufacturer whose trade marks have been forged. Such a system of swindling and plunder as this ought to be unmercifully dealt with; but Parliament must give protection. Amongst others, Messrs. Brookman and Langdon, the well-known black-lead pencil manufacturers, write us complaining that they have suffered, and still suffer, severely by these dishonest practices. The articles imported are, of course, of the most worthless character, and injure the reputation as well as the business of Messrs. Brookman and Langdon; and they are most anxious, as many other manufacturers are, to obtain protection against these foreign robbers of their well-earned fame, as well as of their long-established business. We are glad, therefore, to observe that a Bill bearing on the subject of trade marks has just been introduced into the House of Lords by the Lord Chancellor.

THE FLOW OF WATER IN SEWERS.

IN a recent number (p. 44, *ante*) is an article referring in general terms to the flow of water in sewers. As I have at hand a few *facts* collected from actual observations and gaugings, you may perhaps not be unwilling to publish them as bearing on the subject. My partner, Mr. H. U. McKie, and myself, in designing and carrying out the works for the application of the sewage of Carlisle to land in the neighbourhood of that city, found it necessary to inform ourselves as to the quantity of water passing through the outlet sewer at the point where the pumping engine was fixed for lifting the sewage. For this purpose we took an accurate gauging of the flow once every hour, from 11 a.m. on the 21st October to 11 a.m. on the 22nd October, 1859. This was at a time when, taking the whole twenty-four hours, the flow might be considered an average quantity; that is, it had not been increased by previous rain or other causes. Contemporaneously with the gaugings, samples of the sewage were taken for analyses; and it may be here remarked, that the strength or richness evidently increased or diminished with the quantity.

We found that from 11 p.m. to 6 a.m. there was a constant flow of 4,608 cubic feet per hour. This was apparently water without the slightest admixture of sewage matter. Soon after 6 a.m. the flow began to increase, and continued to do so until 11, when the quantity passing the gauge was 7,200 cubic feet per hour: at noon it had dropped to 6,372 cubic feet, and then rose steadily to 4 p.m., when the flow was again 7,200 cubic feet, as at 11 a.m. From 4 the quantity decreased steadily until 7, at which hour it was 5,184 cubic feet, rose again to 5,400 at 8, and then fell gradually to the minimum of 4,608 cubic feet at 11 p.m. The maximum flow at 11 a.m. and 4 p.m. and the perceptible rise at 8 p.m. take place about 2½ hours after the domestic operations following the ordinary meal hours, this being the time taken for the sewage to traverse the house drains and sub-mains on its way to the outlet. It would appear at first sight, judging from its regular and sustained flow during the seven hours at night, that the clear water was probably supplied by land-springs, and might be taken as swelling the total flow during the day; but this supposition appears incompatible with the known quantity of water pumped into the city daily by the water-works pumping-engine. It is more probable that the quantity of water entering the sewer *from the subsoil, through its own structure*, is considerably more in the night than during the day. For a great part of its course the outlet sewer is built in a stratum of water-bearing gravel, and the height of the water is doubtless ruled in some measure by the level of the adjacent rivers Caldew and Eden, and as the sewer is carried just under the bed of the former, this water-level is certainly some height up the sewer,—say about springing height. Now, when, during the day, the discharge from the city is passing through the main, an equilibrium is established between the water inside the sewer and the water in the gravel; but so soon as, at night, the supply is stopped in the sewer, the external water finds its way through the brickwork by simple gravitation, and keeps up a flow, constant until 6 a.m., and then gradually dimi-

nishing as the sewage increases. In the case of Carlisle, from 8 a.m. to 8 p.m. were the hours when the sewage seemed worth the cost of pumping for the purpose of irrigation. In other places these hours may vary a little, as they will be regulated by the distance of the works from the sewage-producing sources, and the gradients and condition of the sewers themselves.

JAMES MANSERGH, A.I.C.E.

WEDGWOOD MEMORIAL COMPETITION; BURSLEM.

SIR,—Allow us, through the medium of your columns, to enter our earnest protest against the treatment received by the unsuccessful competitors in the second competition for the Wedgwood memorial building at Burslem. It will be remembered that in the first competition professional assistance was secured to aid the committee in selecting the best design. In their report the professional advisers selected four from which to choose the premiated designs, recommending at the same time that neither of the designs should be carried out, that more explicit instructions should be drawn up, and that the authors of these four designs should be invited to a second competition. This report was adopted by the committee, who added two, however, from the other competitors (one being an *auctioneer* in the neighbourhood of Birmingham), making six in the whole. Against the addition of these two we protested, from more than one cause; but having faith in the skill and judgment of the gentlemen under whose advice the step in respect to the second competition was taken, we consented to furnish another set of drawings. Much to our astonishment the prize was awarded to one of those gentlemen whose names were added by the committee, even to the auctioneer whose previous design had not been deemed "worthy of comment" by the selecting architects. We have just now, however, been informed that the services of these gentlemen were dispensed with on the second occasion, and that the hasty selection (the drawings having been examined and decided upon in one, or at the most two, evenings) was made by the committee without any professional assistance. This we consider a gross breach of faith on the part of the committee, as we should have refused their overtures had we suspected for one moment that they intended to exercise their own judgment only in selecting the best design. We challenge the committee to submit the designs to the award of competent and impartial judges.

JUS, SUPRA VIM.

Books Received.

VARIORUM.

AMONGST the books that have reached us, and we are very glad it has done so, is "Minnie's Love," a new story, by the author of "The Trap to Catch a Sunbeam," "The Dream Chintz," and many other tales, published by Lockwood & Co., of Stationers' Hall-court. "The Trap to Catch a Sunbeam," a charming little tale, was written by a young girl, daughter of a well-known antiquary and author; and, with little advertising until lately, has run through thirty-five editions. The young girl is now the wife of a working clergyman and mother of children, with home duties and parish duties, well performed, and not light; but still finds time to use the pen with good effect. "Minnie's Love" is the longest and most elaborate story she has yet written. Like all her previous works, it is healthful, hearty, and hopeful; a woman's book, intended mainly for women. There is a little weakness in the writing at starting (we mention it for the sake of the next edition); but this got over, there are few who will not find pleasure in the perusal of this story, and none who may not be benefited by its teaching.——"A Treatise on Rivers and Torrents, with the Method of Regulating their Course and Channels. By Paul Frisi, F.R.S., &c.; to which is added, An Essay on Navigable Canals," has been translated by Major-general John Garstin, of the Bengal Engineers, and published by Weale, of Holborn. Frisi was a man of note in his time, as is proved by the fact that a Milanese Barnabite of the eighteenth century became a F.R.S. of England, and a member of the Royal Academy of Sciences at Paris, of the Imperial Academy at St. Petersburg, and of the Royal Academies of Berlin and Stockholm. He was also a professor at Milan, and intimately versed in hydrometry and hydraulics; so that his treatises on rivers and canals are of considerable value; and hence their republication in the form of a new and corrected edition. A treatise on railways and locomotives, written in the beginning of the present century, would be now of very little use; but a treatise on canals written in 1762, by such a man as Frisi, is still of standard value; more especially at a time when the prospect of an application of steam to the propulsion of vessels on canals is turning the public attention anew to these by no means modern inventions. The treatise on rivers and torrents, and their regulation, may be said to have suffered still less, if possible, than that on canals, by the lapse of time; nevertheless, Frisi has fallen into some minor errors, from which, in his era, it was not easy to escape. Thus he tells us he is "of opinion that round stones, gravels, and sands, are substances originally prepared by Nature and spread all over the globe," and are "as ancient as the creation." In his day it was even maintained that geological petrefactions of fishes, &c., were of this nature. It is evident that although Frisi saw clearly that rivers and torrents were incapable of breaking up rocks into gravel and grinding down gravel into sands, he had formed no conception of the tremendous powers of frost and ice, and of these very rivers and torrents when converted into moving glaciers.——"A Memoir on Northumberland; descriptive of its Scenery, Monuments, and History; by W. Sidney Gibson, M.A. and Barrister-at-Law," &c. (Longman & Co.), is well and pleasantly written, and gives an interesting account of a picturesque and important district, which contains many archæological and other records of time long past. The condition of the labourers' cottages on some of the great estates of Northumberland has been deplorable; but there has of late been considerable improvement in this respect it appears. "Lord Grey's Howick Cottages," says Mr. Gibson, "are models of neatness; and the Duke of Northumberland has spent immense sums on his estates. His Grace set about the improvement of his labourers' homes in a business-like way; and an immense number of cottages marked by fitness and utility, and by a wish to benefit the occupiers, have consequently risen;—a permanent improvement to the property and an honour to the noble owner." The agricultural villages and the labourers' homes generally, as well as the population of the agricultural districts, stand, however, in favourable contrast to the chief part of the pit villages, as they are called, and the mining population, of this county, of whom we recently took occasion to speak. "Long rows and aggregations of unsightly cottages," says Mr. Gibson, "peopled only by those who earn their living from the adjacent pits, mark too many of the colliery districts; and the cottages, especially where the property is leasehold, are generally hideous, sordid, barrack-like abodes; not, indeed, destitute of cleanliness and homely comfort, but totally wanting in the humanizing though humble adornments of southern rustic homes."—— A series of useful "Tables, prepared for the assistance of architects, surveyors, builders, contractors," &c., in calculating workmen's wages; by Henry Tovey, architect and surveyor; have been published by Weale. The tables are classed under thirty headings, and are calculated at the rate of ten hours per day, to the nearest fraction on the workmen's side; from half an hour to nine days, and from one shilling to ten shillings per day. These will be useful to many.

Miscellanea.

THE LATE MR. THOMAS FINDEN, ARCHITECT.—We regret to record the death, on the 2nd instant, of Mr. Thomas Finden, of Mitcham, formerly of John-street, Fitzroy-square, and more recently of Adam-street, Adelphi, where he practised for some time, in conjunction with Mr. T. Hayter Lewis. The name of Finden is, perhaps, even better known to the world of art through his late brothers, William and Edward, eminent engravers, than in connection with the subject of our brief notice; nevertheless, Mr. Thomas Finden enjoyed a considerable practice; and, within the sphere of his action, we may enumerate the surveyorship to Messrs. Hoare's Brewery, the Craven and other estates. He had several pupils, including Mr. G. Mayhew, Mr. Snooke, and Mr. Mr. A. F. Ashton (the latter gentleman an able writer in this journal). Mr. Finden, who had attained his 77th year, was elected to the mastership of the Carpenters' Company, but died before he took his seat.

THE STAGE.—Miss Helen Faucit has been playing *Lady Macbeth*, in Edinburgh, most triumphantly, after a pause of eighteen months. On Tuesday she played *Pauline*; on Wednesday, *Lady Teazle*; Thursday, *Julia*; and this, Friday, will play *Rosalind*. Of some of these parts, the last, for instance, strange and sad to say, we have no other representative. The *furore* in Edinburgh about her is immense. Next week she will commence an engagement in Glasgow. What are the circumstances of the stage, or the influences, that prevent us from seeing in London this accomplished and excellent actress, now in the zenith of her powers? Our readers know the interest with which we regard the stage from the art point of view, and it is in this respect we allude to the want of a National Theatre where acting of the highest class could find a field, students of the art be developed, and the British drama be worthily fostered. We want a high school of dramatic art to some extent independent of the public.

DANGER OF BAD WRITING.—A writer, in describing a statue not long since, wrote in a slovenly hand that "there was no cloak or drapery." The printer made it "there was no *closet* or *doorway!*" The *mem.* may be useful to your correspondents.—A VICTIM.

ELECTRIC TELEGRAPH COMPANY.—At the half-yearly meeting of the Electric and International Telegraph Company, a dividend was declared for the past half-pear of 3½ per cent., making a total of 7 per cent. for 1860. The receipts during that period showed an advance of 3,166*l.* over the corresponding six months of 1859. As to expenses, an augmentation has been occasioned by extensive decay in gutta percha and timber. Casualties have again occurred to the submarine cables; but, from experience and testing, the precise spot of failure can now, it is said, be at once discovered, and the repairs rapidly effected. The company have 6,541 miles of line, and 32,148 miles of wire, and the number of instruments is 3,352.

FATAL SEWER ACCIDENT IN THE CITY.—Four men have been suffocated in the Fleet-lane sewer, at or near its junction with the Fleet sewer, which latter runs through Farringdon-street. At the inquest held on the bodies, Mr. Haywood, the engineer and surveyor to the City Sewers Commission, was examined. In the course of his evidence he said:—The western branch of the Fleet sewer, into which the Fleet-lane sewer discharges, is 12 feet high by 6 feet wide. Three of the men were found just at the junction of the Fleet-lane sewer with the Fleet sewer, a spot where there was no possibility of the accumulation of vapour to cause death or even annoyance. I can scarcely imagine a place in the whole mass of City sewers where there was less likelihood of such a calamity occurring. The sewer itself in Fleet-lane was amply ventilated. There are two ventilating shafts in the line of Fleet-lane, besides which it communicates with other sewers at a higher level, all of which have ventilating shafts into them; and, from the very extraordinary inclination of the Fleet-lane sewer itself, from 3 to 4 inches in 10 feet, or from 100 to 150 feet in a mile, there is no possibility of putrid matter lodging in it. The nearest point of ventilation in Fleet-lane to the spot where the men were found is about 240 feet distant, but there is a ventilator in the Fleet sewer itself within 30 or 40 feet of the junction with Fleet-lane. I can only guess at the cause of death. I think it might have been occasioned by the sudden discharge of chemical refuse of some description in the immediate vicinity, or—falling back upon facts which have occurred in our large main sewers at intervals within the last ten or fifteen years—I can imagine large quantities of gas refuse let off into the Fleet sewer. There are no gas-works which could flush off their refuse into the Fleet-lane sewer. 240 feet, he added, is not an extraordinary distance from an air shaft: on the contrary, if you take the average of the City sewers, you will find the distances between the air shafts much longer. The men were engaged in removing rubbish at the outlet, but that sewer does not require flushing, being so constructed as to keep itself pure. Last year an experiment was made by Dr. Letheby and myself, on a considerable scale, near the foot of Fleet-street, for purifying the sewers there by a chemical process, but that had not been carried on lately. One of the jurymen, living near the Fleet Ditch, bore witness to the horrible stench in his house a few days ago from the state of the sewers. The contractors' foreman who found three of the bodies, stated that he was nearly suffocated himself in searching for the men, and that there was a strong sulphurous smell in the sewer. According to the evidence of another person connected with the sewers, there was no smell or vapour in the after part of the day on the morning of which the men were killed. Mr. F. Wood, medical officer of St. Bartholomew's Hospital, stated that the last of the four men who was found drowned must have inhaled hydrogen, but he seemed to be of opinion that the others died from suffocation by carbonic acid gas. The lights, however, were not extinguished where the men were suffocated. Some dead rats were found near the outlet from Bear-alley. May not this fact indicate that the noxious vapours emanated from that alley, to which, therefore, the attention of the inspectors and others ought to be turned? Dr. Letheby has procured some of the gases from the sewer for analysis. One of the jury insisted, notwithstanding Mr. Hayward's evidence, that there appeared to be a deficiency of air shafts for ventilation in Fleet-lane. This sad event at all events shows how very important a thorough ventilation of sewers is.

PROPOSED MORGAN HOSPITAL, DUNDEE.—The Court of Session has given authority for the application of the sum of 79,138*l.* of Three per cent. Government annuities, from the estate of the late John Morgan, for the erection of a hospital in Dundee for the lodging, board, education, and clothing of 100 boys, the sons of persons belonging to the working classes, and whose parents are dead or in necessitous circumstances. Mr. Morgan's succession has been the subject of eight years' litigation in the Court of Session and House of Lords.

THE STREET RAILWAY MOVEMENT: BIRKENHEAD.—It is satisfactory to know that the street railway system at Birkenhead is becoming established in public approval. The cars are nearly always well filled, and even former opponents, it seems, acknowledge readily the comfort of riding by these conveyances. The principle of a double line of rails in one street has been found inconvenient, and one of the lines in Conway-street has been taken up; and in return the Street Railway Company are to be ceded an extension of their line from the principal park entrance to Palm-grove, in Claughton. New curves are being laid down, with shallower grooves, and two new and improved cars for winter traffic have been placed on the line.

FALL OF A RAILWAY BRIDGE.—The brick-built bridge of three arches over the Ythan, near Ellon, has broken down, according to the *Montrose Review*. On the previous day some of the workmen observed the centre arch to have risen some inches in the top. A great number of people assembled to view the bridge, not thinking that it would give way so soon; when the whole arches, with the greater part of the piers, gave way, almost simultaneously. Fortunately, no one was hurt. The bridge consisted of three birch arches of 60 feet span each, and about 50 feet in height—the abutments and piers being of stone. The structure was finished about four months ago, and had exhibited no symptoms of anything being wrong. The accident is attributed to the slipping of the substratum on the south side of the river.

WEST OF ENGLAND AND SOUTH WALES DISTRICT BANK—CARDIFF.—The façade of the Branch office of the West of England and South Wales District Banking Company, opened last year, is of Bath stone, except the surbase, which is of Yorkshire stone. The building is constructed fireproof throughout, on Fox and Barrett's system. The banking-room is a fine apartment, 45 feet by 25 feet, and 19 feet high, with richly ornamented coved ceiling: there is provided, over the ground-floor, accommodation for the manager, consisting of drawing, dining, and breakfast rooms, together with eight bedrooms, and all necessary offices. On the basement story are repositories, cash-safes, and clerks' rooms. The office and repositories were heated by Messrs. Haden, of Trowbridge. The fittings of the office are of oak, and are highly ornamental. The total cost of the building was under £7,000. The architect was Mr. T. R. Lysaght.

BROWN STAIN FOR WOOD-WORK.—A correspondent, under the signature of "One of the Browns," wrote us lately as follows:—"Your correspondent, "S. W." of 20th December, who is at a loss for an economical brown stain for woodwork, would find, in Condy's fluid (green), which sells at 5s. per gallon, a stain in every respect suited for the object he has in view. Its action is instantaneous, and its colouring matter fixes itself indelibly in the fibre of the wood, without any preparation or second application." Not being satisfied with this testimony of itself, we did not give insertion to it at the time. "One of the Browns," however, has since forwarded to us some of the fluid in question, which, in fact, is permanganate of potash; and, on putting it to the test, we find that it *is* capable of staining light wood of a brown tint, or rather of a series of brown tints, from very light to very dark, according to the quantity absorbed. Permanganate of potash is a very curious substance in many respects. Even in its mere physical aspect it has the singular property of changing to a variety of hues,—from green to purple, and from purple to brown; and hence it has long been known as "the mineral chameleon." Schönbein, the discoverer of ozone, found it to be a direct and perfect ozonizer, or vehicle communicating ozone, as a cleansing and scavenging principle; and it is now used in Government and other hospitals, as a cleanser and deodorizer of wounds, and as a general sanitary agent. It is the same substance which Dr. Angus Smith converted into a test for the purity and impurity of the atmosphere, and which Miss Nightingale recommends for use in hospitals and dwellings for the same purpose.

PHOTOGRAPHED PORTRAIT GROUP. — Mr. Brothers, of St. Ann's-square, Manchester, has executed what must be considered a remarkable photograph. It is no less than 48 inches long by 21 inches broad, and represents forty-one of the officers of the 84th, now in quarters there. The group is exceedingly well arranged, free from stiffness; and an architectural background, with a couple of statues, give the work completeness. A great difficulty has been ably overcome.

VOLUNTEER PARADE GROUNDS AT LIVERPOOL. A limited liability company has been formed in Liverpool, by the 4th Brigade Lancashire Artillery Volunteers, to provide a central parade-ground in the immediate vicinity of the town, and to erect upon it a drill shed for 150 to 200 volunteers, at a cost of about 1,500*l.*, levelling, gas-fittings, and all included; and the dimensions of which will be 145 feet in length and 80 in breadth, an area allowing of three companies of 25 file each being drawn up in line, and afterwards marched past. The parade-ground is to be at Mount Vernon. The company also contemplate the erection of an armoury, dressing-room, kitchen, non-commissioned officers and officers' rooms, at the rear of the shed.

LONDON.—We learn from the daily papers that the foundation-stone of the building for the New Church Missionary House, in Salisbury-square, Fleet-street, London, was laid on Tuesday by the Earl of Chichester. The site of the new building is adjoining that of the old house in Salisbury-square, and it is proposed to raise a structure some 70 feet high, with a frontage of 51 feet, and a depth of 100 feet. The style will be Italian; the front, to the first-floor, will be built of the Portland stone taken from old Westminster-bridge, and the dressings of the upper portion will be of similar material.——The new wing in connection with the Charterhouse Schools, in the Elizabethan style of architecture, has just been opened. The additional structure has been built by Mr. Hesketh, architect, and will accommodate 200 additional children. The Rev. W. Rogers has done much for the education of his parishioners.

THE OXFORD ARCHITECTURAL AND HISTORICAL SOCIETY.—At the first meeting, Lent term, on February 5, after the list of names of members had been proposed, to be ballotted for at the next meeting, the attention of the society was called to the very beautiful collection of photographs which were being exhibited in London, belonging to the Architectural Photographic Association. The Rev. W. W. Shirley, M.A., Wadham College, then read a paper "On some Questions connected with the Chancellorship of Becket."

GLASGOW ARCHÆOLOGICAL SOCIETY. — The usual monthly meeting of this society was held on Monday evening; Mr. Hart in the chair. The secretary having read the minutes of the previous meeting, and laid on the table several donations, Mr. Alexander Galloway read a "Memorandum as to Objects found in a small Tumulus on the Lands of Blochairn, opened 4th August, 1859," and presented the objects referred to to the society. Mr. A. D. Robertson then read a paper "On some of the Old Castles in the neighbourhood of Glasgow," in which he specially referred to the Mearns, Cathcart, Haggs, and Cruikston Castles, illustrating the subject by numerous plans, views, and drawings of details.

BRICKLAYERS' STRIKE, MANCHESTER.—The strike or lock-out, whichever it may be called, still continues. The men, we are told, attend twice a day at their "house of call," and receive 1s. each time. The Master Bricklayers' Association have issued a statement, including the following:—

"It has been the custom from time immemorial for all operative bricklayers to work from six o'clock in the morning till six in the evening during the summer months, and from daylight until dark during the winter months (except Monday mornings and Saturday evenings), for which special provision is made; and, after deducting meal hours from the above, it has been called a day's work.

This having been the undisputed custom for generations, the surprise of the masters may be imagined on finding that their men refused to start to any job in the outskirts of the city, or to commence work within certain prescribed boundaries, before seven o'clock in the morning, or to remain at their work later than 4·45 p.m.; and this without the least intimation being given to their employers. A meeting of the Master Bricklayers' Association having been called, it was unanimously resolved:—

'That on and after Monday, February 4, 1861, no bricklayer will be employed by this association unless he work in accordance with the rules of 1856 (with the exception of those rules that refer to the Saturday half-holiday); or otherwise they be paid by the hour, at the same rate of wages they now receive.'

A copy of the above having been forwarded to the men, and to which no answer has yet been received, their employers felt it a duty to cease work till a proper understanding could be come to, as one innovation after another crept in so as to leave the masters completely at the mercy of their men, who never ask until they are determined to have whatever they think fit."

SCHOOL OF ART FOR SUNDERLAND.—A meeting has been held at Bishopwearmouth, for the purpose of establishing a school of art in Sunderland. The mayor presided, and the meeting was addressed by the chairman, Mr. Wyld, the Government inspector, and others. It was ultimately agreed to establish a school in the borough, and a subscription list was opened.

THE FINE ARTS IN LIVERPOOL.—Measures are now being taken, according to the *Albion*, to unite the two Liverpool fine art societies; and our informant expresses himself happy that such a settlement of difficulties is in prospect, as the town cannot support two academies; and the gentlemen on both sides, he thinks, should have little difficulty in concerting really practical measures, upon sound principles, for the establishment of a popular and permanent art institution in the town.

NEW BARRACKS, CHATHAM.—The plans and specifications for the additional barracks which are to be erected for officers and men of the Royal Marines Light Infantry have been prepared by Colonel Greene, I.E., director of the Admiralty engineering works. The proposed new buildings will afford accommodation for 500 officers and men, and will be erected adjoining the present barracks. The estimated expense is about 60,000*l.*

NEW CORN EXCHANGE, BURY ST. EDMUND'S.—We mentioned the award of the first premium last week. In respect of this competition, it appears that between 20 and 30 sets of drawings were received by the town-clerk, from, amongst others, Mr. Garter, Mr. H. A. Darbishire, Messrs. Bacon and Bell, Messrs. Ellis and Woodard, Messrs. Randall and Stop, Mr. Chancellor, Mr. Moye, and Mr. F. Bareham, of London; Mr. Clark, of Bath; Mr. Dain, of Burslem; Messrs. Thomas D. Barry, Goodwin, and Butcher, Mr. R. M. Phipson, Messrs. Benest and Newson, and Mr. John D. Ellis. The second premium was awarded to Mr. John D. Ellis, of Norwich.

TENDERS

For the erection of Parsonage House, Cantley, Norfolk, for Mr. W. Gilbert. Mr. J. H. Brown, architect, Norwich. Quantities supplied:—

Spaul	£2,030 0 0
Worman	1,642 0 0
Lacey	1,628 0 0
Foyson	1,614 10 0
Norfor	1,572 0 0

For a house, to be built in the Clapham-road, Wandsworth-common, for Mr. G. H. Swonnell. Mr. G. H. Page, architect:—

Ashby & Sons	£1,670 0 0
Ashby & Horner	1,625 0 0
Willson	1,614 0 0
J. & C. Todd	1,558 0 0
Notley	1,494 0 0
Langtree	1,463 0 0
Bass	1,395 0 0

For taking up the present carriage-way paving in Gray's-inn-lane (from King's-road to the boundary of the district) and repaving with new Mount Sorrel cubes. Mr. Lewis H. Isaacs, C.E., surveyor to the Board:—

Aspinall	£1,525 0 0
Booth	1,517 0 0
Stiles	1,497 0 0
Mowlem & Co.	1,467 0 0
Sewell (accepted)	1,439 0 0

For building Smith's St. Paul's Hotel and warehouses in Newgate-street and King Edward-street, City, exclusive of chimney-pieces, stoves, cooking apparatus, and fittings. Mr. George Grayson, architect. Quantities supplied by Mr. Morris Evans:—

Brown & Robinson	£14,100 0 0
Lawrence & Sons	14,065 0 0
Bowley	14,000 0 0
Mansfield & Son	13,890 0 0
Myers	12,900 0 0
Fish	12,460 0 0

For alterations and additions to premises Nos. 56 and 56a, Wood-street, City, for Mr. Abraham Shore. Messrs. Tillot & Chamberlain, architects. Quantities supplied:—

Hill	£3,927 0 0
Turner & Sons	3,679 0 0
Browne & Robinson	3,657 0 0
Cannon	3,100 0 0
Ashby & Sons	3,095 0 0
Rider	3,040 0 0
Heath	3,000 0 0
Wills (accepted)	2,987 0 0

TO CORRESPONDENTS.

BLISTERS IN PAINT.—Sir,—Can any of your readers inform me how to prevent paint blistering on woodwork exposed to the rays of the sun?—W. H.

J. W. E. (should look to previous volumes of the *Builder*).—B.—J. M. (must give information before we can notice: simple assertion is unsatisfactory).—A Subscriber.—W. J.—H. T.—J. H. B.—J. F.—C. M. S.—J. H. (we know of none such).—C. G.—F. J. (thanks).—F. G. T.—T. D. B.—Flatbande.—S. E. M. (unnecessary).—F. H. G.—C. C. C.—T. G. (York).—S. S.—C. D.—T. H. L.—J. D. (shall appear).—E. B. D. (ditto).—T. D.—A. O.—T. C.—G. E. B. A.—A. A. W.—A. F.—** (a letter will be posted Friday).—

Post-office Orders and Remittances should be made payable to Mr. Morris R. Coleman.